

COAL AGE

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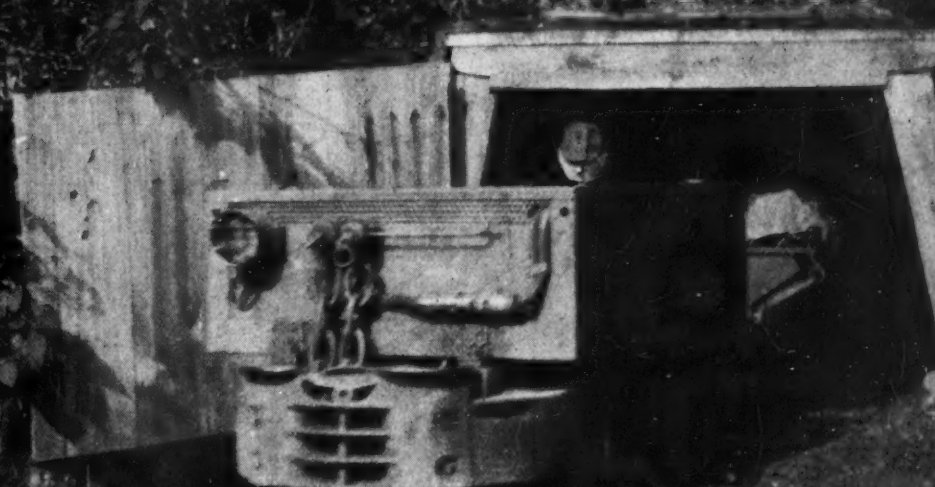
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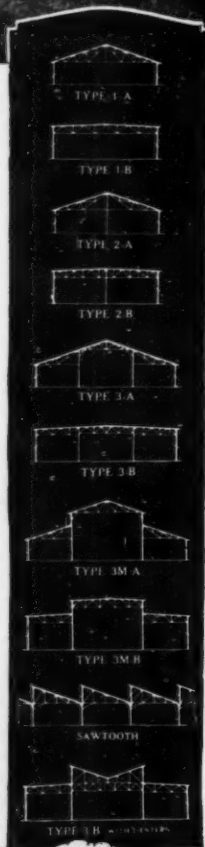
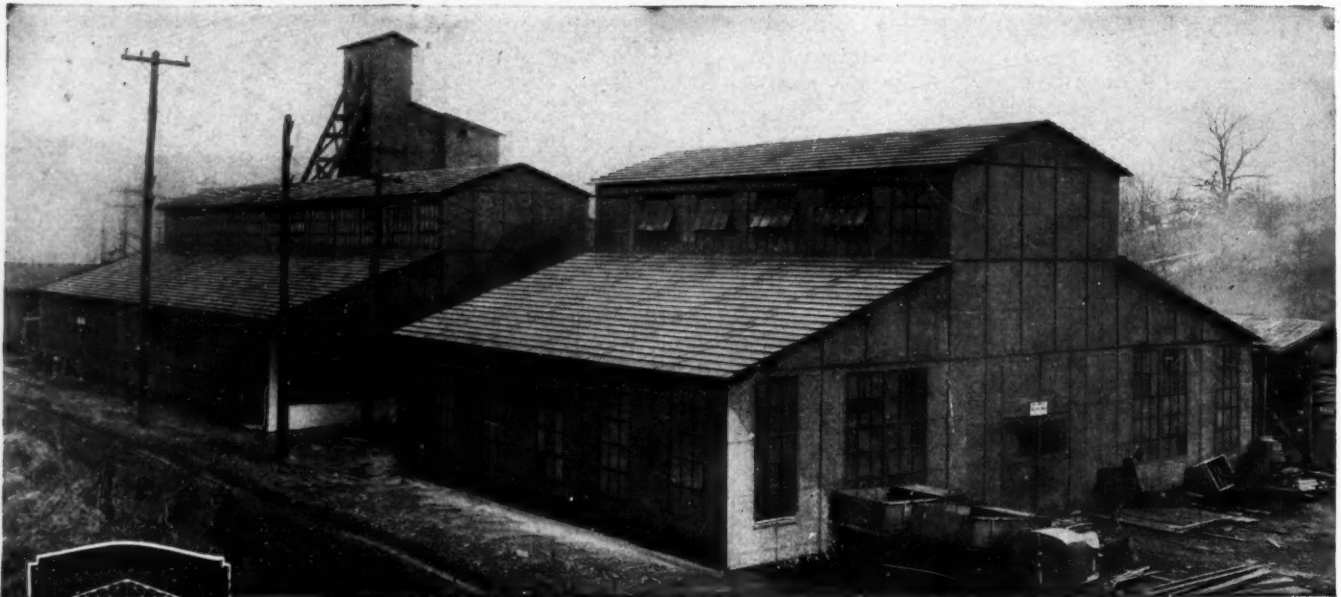
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President Coolidge on Advertising

Addressing the American Association of
Advertising Agencies at Washington, Oct.
27, President Coolidge said:

"Under the stimulation of advertising
the country has gone from the old hand
methods of production, which were so slow
and laborious, with high unit costs and low
wages, to our present great factory system
and its mass production, with the astonish-
ing result of low unit cost and high wages.

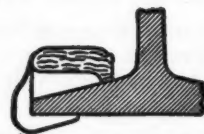
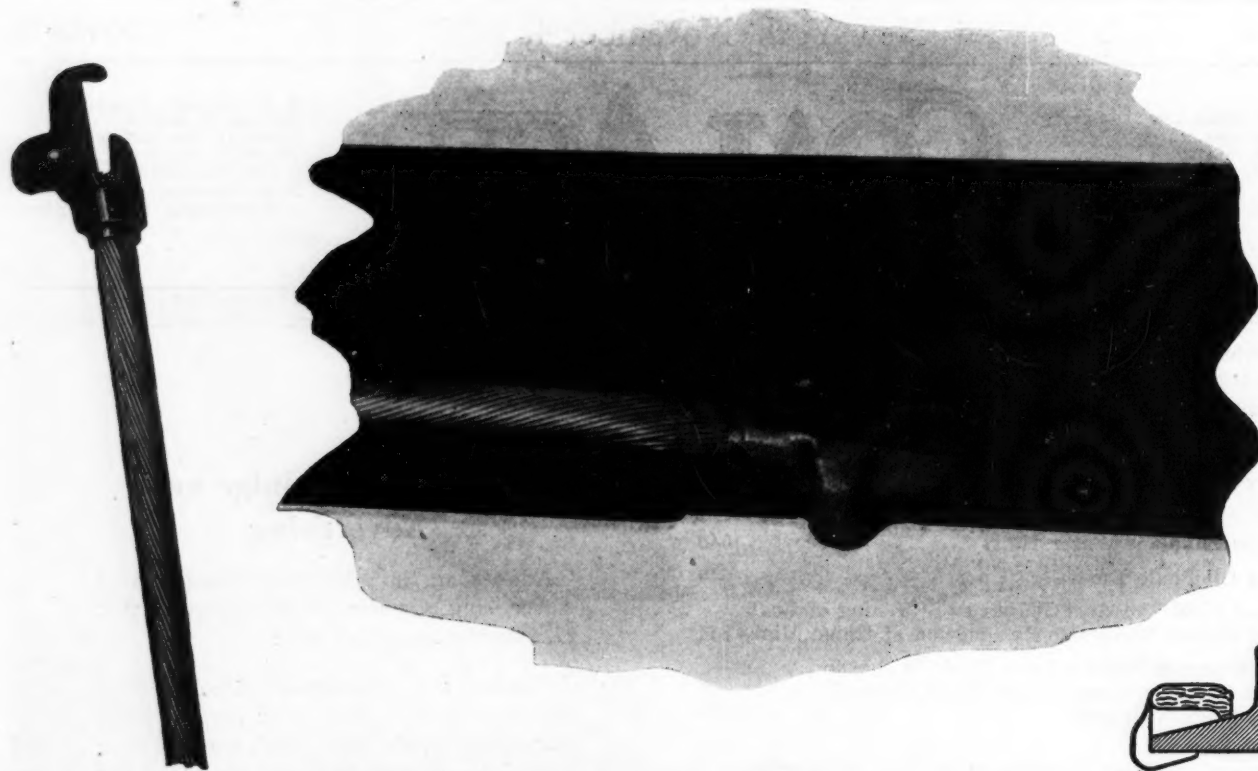
Mass Production Lowers Cost

"The pre-eminence of America in indus-
try, which has constantly brought about a
reduction of costs, has come very largely
through mass production. Mass production
is only possible where there is a mass de-
mand. Mass demand has been created al-
most entirely through the development of
advertising.

"In former days goods were expected
to sell themselves. Oftentimes they were
carried about from door to door. Other-
wise, they were displayed on the shelves
and counters of the merchant. The public
were supposed to know of these sources of
supply and depend on themselves for their
knowledge of what was to be sold.

Advertising Makes Mass Production Possible

"Modern business could neither have
been created nor can it be maintained on
any such system. It constantly requires
publicity. It is not enough that goods are
made, a demand for them must also be
made. It is on this foundation of enlarging
production through the demands created by
advertising that very much of the success
of the American industrial system rests."



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COAL AGE

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JAMES H. McGRAW, *President*

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Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. DAWSON HALL
Engineering Editor

Volume 30

NEW YORK, NOVEMBER 4, 1926

Number 19

Standardization and Simplified Practice

FOR SOME YEARS the American Mining Congress has been conducting a campaign for standardization and simplification of mining. This applies not only to the machinery and equipment used in and around the mines but also to the methods followed underground. It is obviously impossible to establish a single inflexible and uniform standard for all of the mines in this or any other country. But it is entirely possible to reduce the number of machines, processes and methods of mining to a few simple standards for each field or district.

Many of the largest producers years ago adopted standardized equipment and simplified mining methods to which they have since adhered more or less rigidly. Both methods and equipment, however, vary somewhat from company to company even in the same field. In fact to-day it is not unusual to find two mines, within a few miles of each other, working on the same bed under similar conditions but using entirely different methods both above and below ground.

Wherever possible, standardization and simplification of practice should be established, for this will decrease the stock of spare and repair parts that must be carried, lower production costs, reduce selling expenses, cause fewer misunderstandings, and diminish the cost to the consumer. At the same time such practice will increase stability of employment, promote promptness of delivery, raise the quality of the product, and assure profits to the producer, distributor and consumer alike.

Necessity for Fire Drills

IN CASE OF FOREIGN INVASION how much protection would this country derive from, say, 1,000,000 rifles, 100,000 machine guns and 10,000 pieces of ordnance, all of the latest and most approved type, together with ample stores of ammunition and supplies, if no intelligent, trained, disciplined men, no organization, were available to place behind them? Similarly, in case of a mine fire, how much protection will ample underground fire-fighting equipment—water lines, hose, nozzles, chemical engines, pressure tanks, soda-acid and carbon-tetrachloride extinguishers—afford if only a few people underground know how to use them?

Many mines are lavishly equipped with fire-fighting apparatus. Some provide a carbon-tetrachloride extinguisher at each important piece of electrical equipment, and one soda-acid extinguisher or its equivalent for each 100 tons of daily capacity. These latter are distributed at strategic points throughout the workings, and are in addition to one or two truck-mounted chemical engines centrally stabled so that they can be rushed anywhere on short notice. So far as the equipment itself is concerned, the provisions are ample. But where is the organization that is to handle it and meet an emergency when it arises? Is it logical to expect that a pick-up crew composed of any Tom, Dick or Harry

that the pit boss or any other underground official can get hold of on short notice will handle, say, a chemical engine as efficiently as would a group that had been trained in the use and manipulation of such equipment?

In schools, factories, shops, stores, offices, on shipboard and in other places where the same people meet or congregate every day, fire or other drills intended to cope with possible emergencies are a part of the regular routine of business. The efficacy and utility of such drills have been demonstrated almost times without number. Should not similar drills be inaugurated within the mines? If in time of emergency each man would perform the proper sequence of operations, do the proper things as a matter of habit, fewer catastrophes would be recorded against the coal industry.

When Speed Is Unnecessary

A FEW YEARS AGO the vice-president and the general manager of a coal company, after a visit to one of the mines (a shaft operation), returned to the office with the conviction that to get a certain increase of tonnage would involve an increase of 25 per cent in the speed of the hoist.

The electrical engineer was instructed to order the necessary herringbone pinion immediately and, as soon as it was delivered, move the motor and relocate the pinion-shaft bearings by drilling new holes in the bedplate. Instead of doing this, however, he obtained a typical daily hoisting chart, and proceeded to calculate how much more coal could have been raised on that particular day if the rope speed had been 25 per cent greater. The calculation indicated that, other conditions remaining the same, only 3 per cent more coal could have been hoisted.

This was true because the shaft depth was only about 100 ft. and the hoist was in actual operation but a small percentage of the time. Delays at the bottom, waiting for coal, as well as waits both above and below ground on account of faulty cars and poorly maintained caging mechanism, were the real reasons why more coal was not being hoisted. The vice-president and manager were convinced by the figures presented and rescinded the order. The mine production later was increased 50 per cent, but the hoist was never changed. In addition to saving \$500 or more that it would have cost to make the necessary alterations there has been a continual saving in the power demand and in maintenance.

Another example, in a way similar to the case just described, is the change to low-speed gathering locomotives that has been made at New Orient mine. The duty is intermittent, as in hoisting, and, as in the case of a shallow shaft, the machinery can operate at full speed throughout only a fraction of the working shift.

As published recently in *Coal Age*, the trials at New Orient proved that locomotives traveling 3.5 miles per hour will gather as many cars as those that move 6.9 miles per hour. Furthermore, they consume 37 per cent

fewer kilowatt-hours and impose only one-half as great a power demand. Extensive use of the two types has demonstrated the advantage of the slow-speed locomotive.

It is the same with many other items of mine equipment. There is a natural tendency to "speed up" something when there is a call for larger production. In many, if not even most, cases the "superintendence" rather than the machinery should be "speeded up." A careful analysis of the average mine in many instances would disclose places where a considerable demand, energy and maintenance saving could be effected by the adoption of slower-speed equipment.

When Is It Time to Replace Old Equipment?

INTRODUCTION of new processes and equipment always has been slow at the mines. For, despite the possible savings in production costs, the operator and producer always has certain considerations in mind. In the order of their importance these are: the cost of scrapping his present equipment; the time, production and labor expense involved in remodeling an old structure to accommodate a new process and an inherent aversion to paying a tonnage or process royalty. Though these are natural objections, they can all be overcome if the savings obtained from the adoption of the new process are sufficiently great. That is, all can be overcome but the first; and it is on this first point that the man or company attempting to market a new process meets the greatest sales resistance.

Possibly this difficulty arises because the equipment that must be "scrapped" may be only a year or two old; perhaps because it has clearly demonstrated its effectiveness, whereas the new process is only "on paper" or is not clearly understood; or possibly even because of a human disinclination to dispose of anything so long as it continues to operate. Whatever the reason, the fact remains that there is a marked aversion to the abandonment of equipment that is still functioning well. Concrete examples of the savings effected by the use of the new equipment in the same or other fields and cost data based on comparative actual tests of the old and new processes operating under similar conditions are of inestimable value in conclusively demonstrating that machinery may have outlived its usefulness even though it may be new in years.

Consider a breaker that delivers 2,400 tons of prepared anthracite per 8-hr. day. To do this it requires, let us assume, 20 jigs each having an average hourly capacity of 15 tons and costing, installed, \$2,000. The total capital thus involved is \$40,000. Interest at 6 per cent amounts to \$2,400 annually, or \$8 per day if a year is based on 300 working days.

A new process having, in a single unit, a capacity of 300 tons per hour and requiring an initial outlay of \$50,000, with a demonstrated net saving of 3c. per ton in the cost of production, is under consideration to replace the jiggling equipment; however, because of the capital "tied up" in the jigs, the adoption and installation of the new equipment is meeting resistance.

The interest on \$50,000 at 6 per cent is \$3,000 per year, or \$10 per day, while the saving possible from the use of the new process is \$72 per day. Including the investment on the old equipment, the total interest charges amount to \$18 per day, leaving a net gain of \$54 daily as the result of adopting the new process.

No allowance is made in the above estimate for depreciation in either case, for not only is this unknown but it may be reasonably assumed that this item will in large measure balance itself. In reality, however, the depreciation on the new equipment, since it is a single unit, should be at least no greater than that on the 20 jigs. The total capital involved in making the proposed change, if the old equipment is valued at its full cost, is \$90,000. The new equipment will therefore pay for itself, for the old machinery and for all interest charges in about six years. This does not include the indirect gains made possible through more efficient separation and recovery of the coal treated.

Taking the instance cited as a typical example, the time to replace equipment—whether old or new—is when, with a quality of finished product equal to or greater than that delivered by the machinery in use, a newer machine or process proves itself economical. Even though the savings from the new process may amount to only a fraction of a cent per ton of material treated, the total gains made possible through decreased production and operating costs, not to mention the many other advantages realizable from the adoption of the new equipment, should admonish the operator and producer, in the words of the old adage, to "do it now."

Municipal Coal Yards

EVERY ONCE IN A WHILE the American public, or some integral part of it, gets a lesson in coal merchandising, the ways of politicians and the expense of fuel distribution all combined. Unfortunately, in many cases the process is so long drawn out, the conclusion so far removed from the hypothesis with which the start was made, that much of the force of the truth learned is lost in the public mind. Sometimes, also, the real truth is concealed by various parties at interest.

About the time that the World War drew to a close it became a popular indoor sport among would-be leaders of men—politicians, ministers and the like—to bait the coal merchants. Sometimes the bluff was called, but in many cases smooth-tongued politicians induced their followers to embark in schemes for obtaining cheap coal for the people. These ventures started with a grand flourish of trumpets and blare of brass bands, but it was usually found that it took the taxpayers' good cash to keep them going. In time, therefore, they died a natural death; but, unfortunately, not always until they had served the real purpose for which they were designed—namely, somebody's political aggrandizement.

The case of Columbus, Ohio, is perhaps typical. Back in 1918 the city started a municipal coal yard at an expense to the city government, and consequently to the taxpayer, of \$20,000. The avowed purpose of this enterprise was to supply "cheap" coal to the public. The people, however, soon found that the municipal yard was "not what it was cracked up to be,"—in other words, that they could buy a bigger dollar's worth of fuel elsewhere. From a commercial viewpoint, therefore, this venture soon languished, and thousands of dollars were spent in its operation.

At last this municipal yard degenerated into a distribution station for various city departments that used and purchased coal in less than carload lots. The news now comes that the city authorities have at length determined to abandon the yard entirely and sell it and its appurtenances. Let's hope that the people of Columbus have learned their lesson.

National Safety Council at Detroit Clarifies Accident-Prevention Problems

Coal and Metal Mine Safety Men and Executives Discuss Their Common Difficulties—Davidson Presents Alabama's Drive for Greater Safety—Phelps Dodge Representation Plan Detailed

By Staff Correspondent

ABOUT 5,000 DELEGATES of member companies attended the annual meeting of the National Safety Council at Detroit, Mich., Oct. 25-29. The mining session brought together delegates from all sections of the industry and from every part of the United States. W. G. King was elected president and Howard I. Young is next year's chairman of the mining section.

"Thirty-one mines in Alabama have been completely rockdusted," said James L. Davidson, secretary, Alabama Mining Institute, at the first session of the mining section of the National Safety Council in the Tuller Hotel, Oct. 26. He added that, "In treating coal dust to render it inert, the prevailing method in Alabama is sprinkling with water, the sprinkling systems in some of the Alabama mines being among the best and most thorough in the nation. One mine has installed about 40 miles of pipe line for sprinkling."

Speaking about ventilation he said that: "At many places readings in each split are taken daily, or every few days, together with samples of air, which are analyzed. In no case is the methane content allowed to exceed 0.5 per cent. At some mines a ventilation superintendent and crew of helpers are employed to check the firebosses' inspection, see that all brattices, crossovers and doors are tight, that aircourses are sufficiently large and free of obstruction, that crosscuts are driven at proper intervals, that an ample air-current circulates in each split and to plan for sufficient ventilation as the mine workings are extended.

If, in making his rounds, the ventilation inspector finds a door propped open, he must leave it so and, having withdrawn the workmen from the part of the mine affected, must immediately report the matter to the mine foreman. He must then see that ventilation is restored and that the section affected is free of gas before allowing the workmen to re-enter." Mr. Davidson said that, "The gas inspector or fireboss in marking up his visits employed a different colored chalk from that used by the foremen or safety inspectors in making their inspections.

"High-tension electric cables have been removed from slopes and haulageways. Mining-machine cables are placed under the track where it has to be crossed and the machine is grounded to the water pipe in the entry or room while in operation. In order to assist the men in their escape from the mine after a disaster, signboards in the shape of arrows are posted along the passageways and escapeways indicating the best way out. At a number of places underground, maps of the

mine with the routes of escape and live workings marked in red are kept for the use of men in any emergency. Several copies of these maps are available at the mine for use of rescue crews from other places should the necessity arise.

"Among the provisions to avert transportation accidents, are blocking switches and frogs to prevent those walking the haulageways from catching their feet in such wedge-shaped places; parallel-lever switch throws, with ample space between track and wall to prevent the trip rider from being struck by a moving trip or rolled against rib; block signals with trip lights and markers where two or more locomotives are operating over one track; block systems for protecting trips; automatic signals indicating the approach of trips around curves and at trap doors to protect the men who are required to travel the haulageways; the employment of an underground dispatcher of transportation and a motor foreman.

"Trip riders are required to ride either on the front or rear ends of the trip. Couplers or brakemen must not couple cars while in motion. When any new rule is made it is posted and a copy, printed on a placard, is hung on a nail inside each empty mine car, where everyone may see it. Other rules and safety slogans are similarly displayed.

"One large Alabama operating company publishes a monthly magazine for its employees, the columns of

which are devoted principally to accident prevention. This firm also conducts prize contents among the school children and Boy Scouts under 16 years of age for the best essays written on 'Safety Practices In and About the Mines.' Of course, these children know nothing about the subject on which they have to write and have to get all their information from their father or some other relative who is employed in the mines.

"The safety engineer goes into the schools, talks with the children and puts out safety propaganda through them to their parents. Each school child promises that each morning, before a member of his family, who works in the mines goes to work, he will caution him about being careful while at work that day. The children are taught safety songs and to draw pictures of accidents showing the cause and how such accidents could be prevented."

J. J. Forbes, mining engineer, U. S. Bureau of Mines, in the absence of H. E. Mills, assistant to the secretary of the Alabama Mining Institute, who was scheduled to read a paper on the Holmes Safety Association,



H. I. Young

said that the state of Alabama has 40 chapters of that organization that were doing most active work in the promulgation of safety practices.

WHERE ROCK DUST IMPROVES COAL

R. D. Hall said that Alabama has a great opportunity to use rock dust in the most favorable of all positions, namely in the rooms and ends of entries where most explosions occur. Much of the Alabama coal was produced for the manufacture of metallurgical coke. The quality of this coal was important and not the appearance, as was unfortunately the case, where coal had to be sold for commercial purposes. Rock dust spoils the appearance of coal, but it might well be found that the addition of limestone dust to a coal intended for coking would aid in making a more valuable coke, for the lime would take up the sulphur causing it to go into the slag instead of into the iron. In any event, the impurity added to the coke would be the same as the limestone put into the blast-furnace charge, but in a more comminuted state. It is not, of course, certain that this is a correct conclusion, but it is worthy of consideration.

F. M. Correll, safety engineer, Consumers Mining Co., Harmarville, Pa., remarked that his company was rockdusting the coal in rooms by machine clear up to the face. F. W. Smith, of T. H. Mastin & Co., Kansas City, Mo., wanted to know what effect spraying the cutter bar had on the appearance of the coal prepared for market. His clients complained that lumps, where the coal was heavily sprayed, were coated with fine slack and that this material made the sale of the lump fuel difficult. J. W. Reed, director, department of safety, Consolidation Coal Co., Fairmont, W. Va., replied that if the cutter-bar spray was sufficient merely to dampen the coal dust there would be no trouble from this practice.

Mr. Forbes stated that efficient sprinkling cut down the spillage of coal on the mine tracks, increased the life of rockdusting and at one mine halved the road-cleaning force as the fine material did not run out of the cars onto the track. In Alabama, 65 per cent of the output was washed and whatever was done at the working face in the way of rockdusting or sprinkling could not affect in any manner the salability of the product. He said that 20 to 30 gal. of water were used per 100 sq.ft. of running face. Mr. Davidson said it was of little use to moisten coal dust if it was to be left in the mine. All slack should be removed in the interest of safety if not for any other reason.

J. D. Kerr, Oakfield plant, U. S. Gypsum Co., Oakfield, N. Y., asked whether the trolley wires throughout the mine should be guarded. He said that such guards cost 20c. per foot and as the mine he had in mind had 12 miles of trolley wire he thought guarding it would be excessively expensive. Mr. Davidson replied that an electrocution resulting from the absence of a guard would also be costly and added that the use of split hose had been found undesirable. Mr. Hall asked whether, where the roof was of doubtful strength so that the trolley wire was likely to fall, it was well to

place a wood guard that—in the event of such a fall and the short circuit or heavy ground that would be inevitably occasioned thereby—might catch fire.

Charles S. Hurter, technical representative, E. I. du Pont de Nemours & Co., Inc., delivered an address on "Safe Practices in Blasting" based on his experiences in the Lake Superior iron district. This mostly concerned the handling of dynamite above and below ground and the use of that explosive in deep holes with both springing and blasting shots. He also gave some advice about mud capping.

Mr. Ryan said that one coal-producing company found in its mines stray currents of 8 or 9 volts. It decided that it should use blasting caps that would not fire with less than 11 volts and accordingly had some caps made fulfilling that requirement. The officials later found in one of their mines, where no trolley or power system was installed, a stray current of 150 volts. They decided, therefore, that it was impossible to provide absolutely against stray currents and did not have made any more caps of such a high resistance.

Mr. Hurter urged that care be taken to short-circuit the leads until the moment of firing. He added that one might ascertain that there was little or no stray current and proceed on that belief, only to find that the current was there but not passing when the test was being made. It comes and goes irregularly. He also said that one iron company made it a rule to shut off the power for locomotives before firing shots so as to prevent the possibility of stray currents igniting the charges.

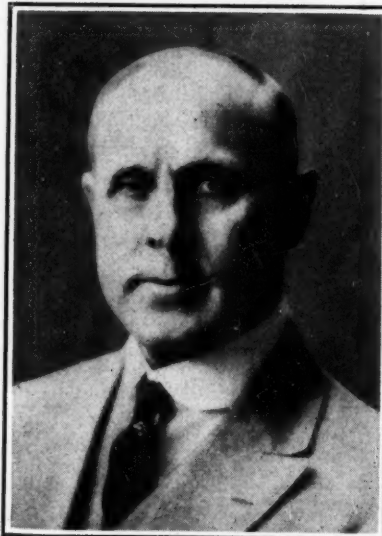
Charles Grabowsky, general superintendent, Oliver Iron Mining Co., Eveleth, Minn., and Mr. Davidson both stated that the children in the schools were being circularized regarding the dangers of blasting caps. Both said that dummy caps were distributed so that the children would know what it was they were to avoid.

A. J. M. Ross, general mine foreman, Homestake Mining Co., Lead, S. D., then delivered an address on "Methods of Promoting Safety Interest at the Homestake Mine." He described the central safety committee of his company which consists of officials and also outlined the constitution of the workmen's committee which is composed of nine men from the mine and five others from the other departments, all elected by

secret ballot. No boss may be elected, nor may any man vote for any one outside of his own level or division.

He said that he had men who were injured as often as three times in a year. After making sure that such men were trying to do their work in a safe manner, they were sent to the medical department for an eye examination. This proved that a large percentage of those who were frequently hurt had poor eyesight. Auxiliary ventilation is used but orders have been given to the effect that the fans must be stopped at once in case of fire and cannot be started except on orders of the general mine foreman, or, in his absence, on order of the superintendent or his assistant.

B. J. Dryer, manager, Safety & Casualty Department, Woodward Iron Co., said that his firm had instituted



Bruce C. Yates

an industrial school which the foremen were urged to attend. It had proved quite helpful in increasing safety. E. E. Crisswell, New River Coal Co., said that the University of West Virginia had provided extension schools with about six instructors. In the New River field, it was compulsory for certain classes of workers to attend one night a week. Of the 1,500 men thus instructed in that field, none had since been hurt, showing that the training made them safe workers.

Reports were made at this meeting by the various committee chairmen. Mr. Reed, of the membership committee, said that the section had 218 members. During the year, 26 had resigned and 41 new members had joined, a gain of 15. He believed the membership would receive further accretion during the coming year, owing to the revival of business. The gain in employees represented in the company memberships was 10,940, the companies joining being large and those withdrawing small.

On Wednesday morning the nominating committee, consisting of Messrs. Ageton, McDowell and Marvin, brought in its report recommending H. I. Young, general manager, American Zinc Co., Mascot, Tenn., as chairman and C. A. McDowell, industrial relations department, Davis Coal & Coke Co., Thomas, W. Va., George Martinson, safety engineer, Pickands Mather & Co., Hibbing, Minn., A. W. Dickinson, general superintendent, Union Pacific Coal Co., Rock Springs, Wyo., and J. L. Hodgson, manager, Phelps Dodge Corporation, Morenci, Ariz., as vice-chairmen with Daniel Harrington, chief engineer, safety service, U. S. Bureau of Mines, Washington, D. C., as secretary. This ticket received the unanimous approval of all present. B. C. Yates, superintendent, Homestake Mining Co., Lead, S. D., chairman of the section, who presided at this, as at other sectional meetings, advocated the appointment of a paid secretary for the section. In this, Mr. Hodgson concurred.

H. C. Henrie, manager, labor department, Copper Queen Branch, Phelps Dodge Corporation, Bisbee, Ariz., discussed employees' representation at the mines with which he is associated and the relation of industrial representation to the safety movement. Mr. Henrie stated that his company had been operating in the Bisbee district since 1881 and that during those 45 years labor disputes had been rare. At present 92.1 per cent of the underground employees are American citizens. Mexicans are employed for unskilled surface labor and constitute 18.5 per cent of the total force. Exclusive of Mexican labor 95.1 per cent of the total number of employees are citizens. Sixty per cent are married and have their families residing in the district.

"The representative plan," said Mr. Henrie, "is modeled after our federal Constitution and provides for three departments—legislative, executive and judicial. The legislative consists of a House of Representatives and a Senate. The House is composed of representatives, one-half of whom are chosen every six months, at elections conducted by the employees, to serve a term of one year. Electoral divisions are based on the natural divisions of operations and arranged so that

every department is represented. One representative is allowed for each 100 employees or major fraction thereof in each electoral division, but it is provided that each division shall have at least one representative. Foremen, bosses or other supervisory employees cannot vote or serve as representatives. The House assembles once a month and special sessions may be called by the manager. The Senate is composed of members chosen by and from foremen and bosses who are organized and elected much as the members of the House."

"No legislation" says the Constitution, "shall become effective until it has passed both Houses of Congress and been approved by the manager of the Copper Queen Branch." If a measure does not meet with the approval of the manager, he shall return it within ten days with his objections to the House in which it originated, which, after noting the objections, may proceed to re-consider or revise it, but any measure may be passed over the manager's veto and become effective by a two-thirds vote of the members elected to each house."

"The manager," said Mr. Henrie, "is permitted to attend the meetings of either house at any time and participate in a discussion of any measure but has no vote." All grievances not settled satisfactorily to a complainant by the grievance committee, which



J. L. Hodgson

consists of three workmen appointed by the speaker of the House of Representatives and two members of the supervisory staff appointed by the President of the Senate, can be carried to the Supreme Court, consisting of a representative of the employees, one of the company and a third who is required to be a well-known citizen of the community having no connection with the Phelps Dodge Corporation.

"The plan," said the speaker, "has not been changed since its introduction and during a five-year period over 500 matters bearing on questions of wages, efficiency, bonus, standards, payments, working conditions and safety have been investigated, discussed and settled."

"In August, 1922, the manager met," said Mr. Henrie, "with the House of Representatives and stated that the wage schedule of the company needed a revision which might increase certain occupational rates and possibly reduce others. After reference to the wage-and-bonus committee which met representatives of the management the new scale was passed by both Houses, approved by the manager and accepted by the employees."

REPRESENTATION BRINGS SAFETY

Mr. Henrie said that it was difficult to determine how far the plan had aided production because improvements in methods had resulted in increased operating efficiency. It seemed, unquestionably, to have assisted in the promotion of safety, for in 1924 the accident rate of all the departments together averaged 1.04 per 1,000 shifts worked. In the following year it had fallen to 0.56 and in July, 1926, to 0.023.

In the absence of J. S. Jones, safety engineer, Old Ben Coal Corporation, West Frankfort, Ill., J. T. Ryan abstracted his paper on the value of rockdusting as a safety measure in preventing coal-mine explosions.

Mr. Jones, in his paper declared that "as the depths of the coal seams worked increased, the mines tended to become more gassy and drier, making great precaution against mine explosions necessary." He said that the coal-mining industry faced the problem of "preventing the small explosion from developing into a big one." It fully realizes that so long as men work in a mine, there is difficulty in absolutely preventing an initial explosion. "The use of rock dust," said Mr. Jones, "is to prevent a mistake from developing into a disaster."

Mr. Jones presented the facts as to twelve mine explosions, all of which Mr. Ryan said had occurred in Franklin County, Illinois. In one mine that had not been rockdusted "the flame penetrated into every part of the workings except into two sections which were unintentionally rockdusted by the dust arising from a grading of the floors of the entries. This grading resulted in the mine dust in these locations having a high ash content. The rock dust, thus afforded, was supplemented by sand that had been used by the locomotives on the steep grades. An explosion that occurred in a mine with rock-dust barriers and coating, Mr. Jones said was safely extinguished because the force was attenuated by expansion into a large open territory. The barriers fell and raised dense clouds, but he did not believe the dust extinguished any flame. No casualties resulted in this instance. In another case the dust from a soft roof shale, that had fallen, had given the mine a natural rockdusting, thus protecting the entries. In this case two shotfirers were killed.

In a fourth instance the mine was not rockdusted, and the flame had three directions in which it could go. Two were naturally rockdusted as the result of grading operations. The flame took the direction where there was no rock dust, and 21 lives were lost. In three explosions only rock-dust barriers had been provided, but they extinguished the flame. In one of the three, three men were killed out of 450 working, in a second no one was killed, though 530 men were working and in the third only 30 men were in the mine and there were no fatalities. In two cases the mine was protected both by barriers and coating. In one of these, two men, at the origin of the explosion, were killed, but 39 others in the mine at the time escaped; and in the other, one man was fatally injured and 36 escaped. In two other cases explosions occurred in shale-dust zones. In one of these instances there were 550 men in the mine and all came out alive. In the other there were 600 men and all but one survived.

Mr. Jones says in his paper that the "value of rock dust is in its stability. It does not evaporate and only a very small part of it is blown away. Redusting from one to three times a year will fill the rock-dust requirements of almost any coal mine. The cost of rockdusting will vary from a quarter to three-quarters of a cent per ton of coal produced, when considered on a yearly basis."

Miss Marion Tilford, field secretary, of the Educational Section of the National Safety Council—a divi-

sion maintained at the expense of the casualty underwriters and not from other funds of the council—described the service the section was prepared to give, in a certain measure, to elementary schools desiring to establish safety work in connection with their other courses. She detailed the bearing of the education of the child on industrial safety and reported on the successful initiation of such training in the schools of the Mesabi Iron Range.

Dan Harrington's paper on the safeguarding of electrical equipment in mines was presented by R. V. Ageton who declared that it was presented by Mr. Harrington as representing his personal opinion and not as the expression of the views of the U. S. Bureau of Mines. This article, which expresses somewhat contentious opinions on mine safety contains so much of value that it would not be fair to give it solely in abstract. In discussing the paper, Mr. Davidson said that it would be a mistake to rely solely on the introduction of the electric cap lamp for safety. Ventilation is the main defense against the dangers of gas.

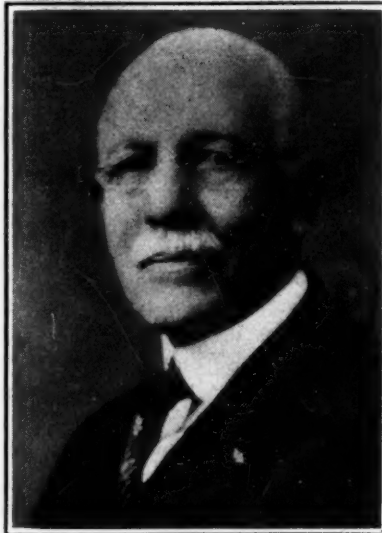
Mr. Smith questioned whether any electric machinery should be introduced into mines where the electric cap lamp is in use. Mr. Reed declared that he could see no reason why storage-battery locomotives and machinery driven by storage-batteries on power trucks should not be used under such circumstances.

The annual banquet was held in the evening of Wednesday. The president, Charles B. Scott, before introducing the toastmaster, James Schermerhorn, announced the results of the election. Walter G. King, of the American Optical Co., is president for the ensuing year supported by the following executive committee: W. F. Austin, Detroit, vice-president for engineering; C. E. Pettibone, Boston, vice-president for industrial safety; H. A. Reninger, Allentown, Pa., vice-president for local councils;

A. E. Whitney, New York, vice-president for education; Charles E. Hill, New York, vice-president for public safety; Dr. A. L. Shoudy, Bethlehem, Pa., vice-president for health; H. E. Neisz, Chicago, vice-president for public relations; H. E. Webber, Chicago, vice-president for finance and treasurer and W. H. Cameron, Chicago, managing director.

At the meeting of the mining section on Thursday the chairman appointed Dan Harrington, J. L. Hodgson and W. H. Cameron as a committee to confer with the officers of the National Safety Council on the appointment and compensation of a paid secretary for the mining section.

C. A. McDowell, manager, industrial relations department, Davis Coal & Coke Co., Thomas, W. Va., read a paper on safety in and about mines. "The organization for industrial relations," said Mr. McDowell, "was effected in latter part of 1917." Around it has been built the safety work of the company. "By 1920 approximately 75 per cent of the employees had been trained and were holding U. S. Bureau of Mines and company first-aid certificates. It was only last year that the plan was adopted of having 100 per cent of the employees qualified by training for first-aid work."



Walter G. King

Every employee, when he completes the training, receives a first-aid pocket packet made specially for the Davis Coal & Coke Co. This packet has been used extensively by other companies. It belongs to the individual who receives it, and by personal contact and from injury cards received, it is learned that he treats injuries in the mine, on the street, in the home, and elsewhere."

"Such a percentage of men trained in first aid helps materially in maintaining the excellent record of the company. Last year 70 per cent of the persons sustaining lost-time accidents received first-aid treatment. It is interesting to note that last year 278 of the employees of the company rendered 574 first-aid treatments. The company also received 146 injury cards from 63 school children.

FATALITY RATE QUARTERED

More than 10 per cent of the employees at each plant have been trained in mine-rescue work and hold U. S. Bureau of Mines certificates. Certificates of the same bureau for advanced training are held by 59 employees.

"The fatality rate has been reduced from its high peak in 1918 of 6.35 per thousand employees to 1.38. The fatality rate per million tons of coal produced has been lowered from its high peak in 1918 of 6.45 to 1.65. The severity rate (days lost per thousand hours worked) has been reduced in the same time from 25.8 to 10.5. The frequency rate (accidents per million hours worked) has been reduced concurrently from the high peak of 83.1 to 51.1."

In discussion Mr. McDowell said that first-aid training was compulsory and received by the employee in his own time. All men entering the service of the company are asked whether they have U. S. Bureau of Mines' certificates for first-aid training. If they have not, they have to agree to take it, as part of the terms of the employment. The training is given in the evening and does not take any of the working time of employees. The rescue training is given during the day and the men are paid for the time involved.



A. W. Dickinson

The man who has a grievance discusses it with his foreman; failing agreement, the man discusses his difficulty with the superintendent. If no understanding is reached, the employee presents his case to the employee's commissioner who in turn tries to settle it with employer's commissioner. Failing to iron out the difficulty, it is presented to the general manager. If he cannot settle it to the satisfaction of the employee it goes before a committee of six men, three representing the employees and three the company, each group of three having one vote. Then if it still is not settled, the senior federal judge hears the case or appoints an umpire to hear it. His decision is final."

At the close of the discussion J. J. Forbes, supervising engineer, instruction section, U. S. Bureau of Mines, presented 109 safety kinks in mining, many of which will appear in later issues of *Coal Age*. These were

illustrated by lantern slides. During the discussion which ran through the presentation, Mr. Bannister declared that he had obtained excellent results with using common 3-in. rubber hose in place of a box trough for guarding trolley wires. He said the Madison Coal Corporation for which he is general safety inspector purchased the hose already slit for 8c. per foot. It was stated that common waterproof hose was of little or no value, especially in wet places. The hose, said Mr. Bannister, should not be imperfect.

Mr. Grabowsky said he had found it difficult to re-insert the trolley wheel when withdrawn from the wire under the guarded section. He explained that the employees were forbidden to run the locomotive except with the trolley wheel trailing. It was necessary, therefore, to withdraw the trolley from the wire, and though



Daniel Harrington

it could be replaced that could be done only with difficulty and delay. On one side of his mine the trolley wire was on the room side, and lengthy guarding was necessary. Mr. Bannister had experienced no such difficulty.

The retiring president read an address urging that the safety organization that did not enlist the co-operation of every one must fail of attaining its aims. Mr. Ageton described the flag system of the Tri-State Zinc & Lead Ore Production Association. Some time ago a call was made for the names of ground bosses (mine foremen) who had run their mines for two months without a single lost-time accident. Only three ground bosses presented claims to the distinction. There was much winking among the knowing ones in the Joplin district. Such a record, they said, was unattainable.

EVERY MINE WOULD FLY FLAG

Eventually a flag with a picture of "Pete," the Tri States' emblem of safety, was lent to the mine that had no lost-time accident for 2,000 man-shifts or a 2 months' run, a flag with a big red star to the mine that had no accident for 4,000 man-shifts or a 4-months' run, a flag with a new white broom on it to the mine without accidents for 10,000 man-shifts or 6 months' run and a flag with all the insignia to the mine that had no accidents for 20,000 man-shifts or a year's run.

Now, no less than 69 mines fly the "Pete" flag; 24 mines display the red star; new brooms fly from 14 mines and 3 mines carry the combination flag. The rustlers, in local parlance men looking for work, have an eye for the jobs where the flag flies. They are not looking for graveyard jobs. When the flags were introduced, 29.7 man-shifts were being lost by accident in every thousand shifts worked. In 1925, 16.9 man-shifts and in the first six months of 1926, only 10.1 man-shifts were lost per thousand man-shifts worked. The banners had performed a work well justifying their introduction. The mines are almost three times as safe as they were before the campaign started. Once, few believed that any mines could rightfully claim the first flag and now 3 mines are flying flags ten times as difficult to win.

Safety and Fire Protection Assured at Nemacolin*

Every Working Place Inspected Five Times Daily—Carbon-Tetrachloride Extinguisher Kept at Each Major Piece of Electrical Equipment and One Charged with Soda-Acid Maintained for Each 100 Tons of Output

By W. Z. Price

Assistant Superintendent, Buckeye Coal Co.,
Nemacolin, Pa.

TO THE MANAGEMENT at Nemacolin safety is more than a mere word. So much has been written about safety in mines that I hesitate to add more. It is believed, however, that frequent inspections by proper officials together with strict discipline will forestall most preventable accidents. In these mines working places are inspected twice daily by the fire boss, twice by the assistant mine foreman for that section and once again by the night fire boss before the cutters come in. This is irrespective of the visits of the mine foreman, his general assistant or the safety inspector. These latter officials naturally do not visit each face every day. Inspection without discipline is incomplete. If men learn, and they soon do, that they will be strictly disciplined for rule infractions and not censured for someone else's error or for incidents beyond their control, they will be ready at all times to co-operate with the management and the highest degree of industrial safety and efficiency will be thereby attained.

A central safety committee consisting of department heads meets with the superintendent once each month and discusses recent accidents and any feasible means for preventing similar occurrences in the future. In addition, possible areas of danger in and about the plant are discussed and action taken to remedy them.

After this meeting the mine foreman calls together the underground organization, impresses on them the points brought up in the central committee session and asks for suggestions. This group of 30 or more men is encouraged to talk freely and many valuable ideas are thus developed. The plant safety inspector together with the mine foreman attends both meetings and perfect co-ordination is maintained.

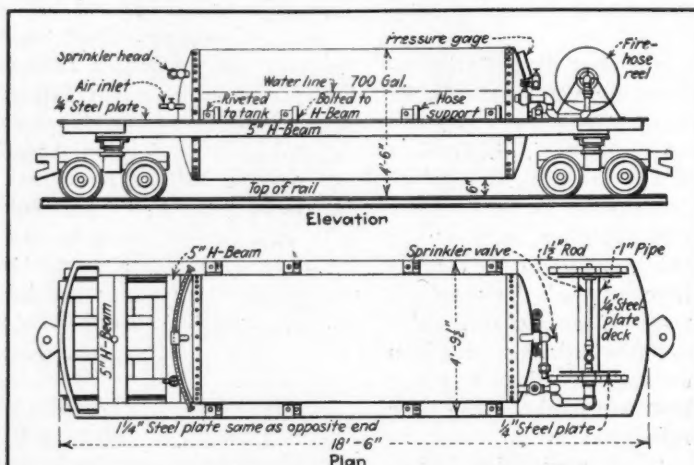
Naturally the safety inspector investigates and makes a report on all accidents. But in addition an underground committee also makes an investigation and brings in its report. This committee consists of an assistant foreman, a transportation man and a loader. Its personnel is changed periodically by the mine foreman.

A mine owner who has made a large investment underground should protect it against fire as carefully as he would a similar investment on the surface.

The first fire fighting equipment of large size to be installed at this operation was a tank car. Two of these were built several years ago and have been extensively used for fire fighting purposes. This car, a cylindrical tank with hemispherical ends, is 11 ft. long and 4 ft. in diameter. It rides on two platform trucks, being suspended horizontally between 5-in. H-beams. Its overall length is 18 ft. 6 in., height 4 ft. 6 in. and its width 4 ft. 9 in., yet it will round a 16-ft. radius curve with ease. It holds 700 gal. of water which fills it slightly over two-thirds full, the remaining space being occupied by air under 100-lb. pressure.

At one end, mounted on the truck is a reel holding 200 ft. of standard 2½-in. fire hose. This reel has a tank connection along its axis and is directly connected to the hose so that in case of fire the operator after unreeling the hose needs only to open a valve to have available a stream of water under a pressure that bears favorable comparison to that employed in most surface fire fighting equipment.

As the tank will completely discharge the water in from 3 to 5 min. a second tank is necessary. The first may thus be recharged while the second is being discharged. With the two cars 400 ft. of hose is available. This is sufficient to reach most places, certainly until additional lengths can be forwarded from the surface. Government approved portable air compressors are used throughout the mine. These are employed for charging the tanks after the water has been run



Plan and Elevation of Fire-Fighting Tank

Two of these tanks are employed and, although they are 18½ ft. long overall, they will round a 16-ft. radius curve with ease. This is possible because they are provided with articulated trucks. Two hundred feet of hose may be carried on the reel and the tank will deliver water at a pressure of 100 lb. per square inch.

in and the connections have been closed.

On each car is a set of hose adapters which will enable the fire hose to be connected to the water line. These pipes naturally are of standard threading, while hose couplings are of Underwriters thread.

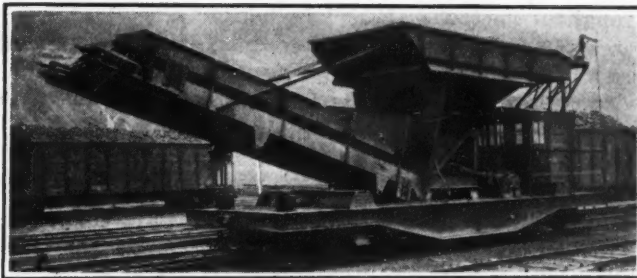
Occasions may arise when it may be necessary to get close to a fire and in such cases a Hayward nozzle is used. This is capable of throwing four separate streams simultaneously—a lateral spray at right angles to the nozzle with a radius of 35 ft.; a diagonal lateral spray just ahead of the first named; another diagonal spray at the end and a direct stream. The nozzle has several detachable rings which vary the flow so that 12 different combinations of streams may be obtained. This nozzle is kept in a glass box in the lamphouse so that it can be seen and its availability known to all employees.

*Abstract of second half of paper entitled, "The Coal-Mining Plant of the Buckeye Coal Co.—Mine Operation," presented before the meeting of American Institute of Mining and Metallurgical Engineers, held at Pittsburgh, Pa., Oct. 5 to 9, 1926.

Its great advantage is apparent in that three sheets of water will drive smoke ahead of the hoseman enabling him to reach the scene of the fire with comparative ease.

Each working face contains a 1-in. water line and a 2-in. air line, so that water and air for refilling the tanks are always available. The sprinkling system is under a constant head from a tank on the surface. The pressure is never less than 100 lb. per square inch. Each face also is provided with a $\frac{1}{2}$ -in. sprinkling hose, so that in most cases a fire can be extinguished without calling for the tanks. The main sprinkling line is a 6-in. pipe sub-dividing into 4- and 2-in. lines.

Other methods, however, have been provided for fire fighting should water, for any reason, be impractical. Thus, each electric locomotive, whether it be trolley, cable reel or storage battery (and there are 34 in all), is equipped with a carbon tetrachloride extinguisher. In each section of the mine several 2 $\frac{1}{2}$ -gal. soda-acid extinguishers are kept. This latter equipment has already been the means of avoiding several serious fires. Defective blasting caps igniting the explosive and thence the coal, a roof fall on a battery locomotive shorting its cells and another on a trolley wire shorting it on the rail and igniting the loose roof coal lying about, are samples of potential mine fires that these 2 $\frac{1}{2}$ -gal. extinguishers have smothered. These extinguishers are



Slate Disposal Larry

This machine is mounted on a turntable, and, by means of its delivery belt, can discharge mine refuse in any direction and several feet from the center of the larry.

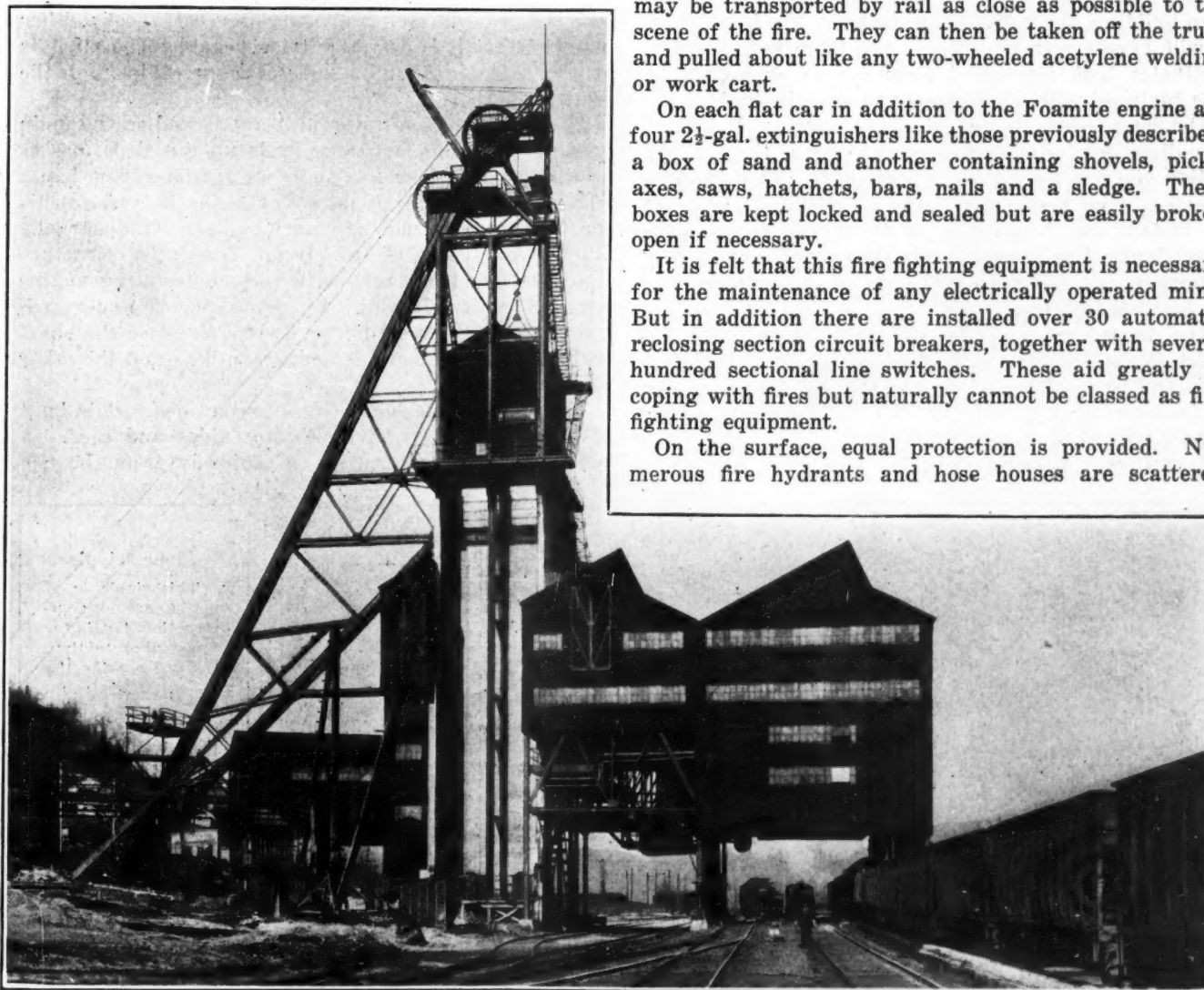
distributed in a ratio of one to each 100 tons of daily production. They have been invaluable.

Lastly, 40-gal. Foamite tanks are provided. They form necessary adjuncts to the tank cars, as fires might easily occur in places where no track is laid, such as air courses, and if action were to be deferred until sufficient hose could be rushed in from the surface, the blaze might assume tremendous proportions. These "fire-foam" engines are endorsed by the Underwriters and need little description here. They are mounted on wooden carriage wheels and the whole is placed on small flat cars built especially for them and by which they may be transported by rail as close as possible to the scene of the fire. They can then be taken off the truck and pulled about like any two-wheeled acetylene welding or work cart.

On each flat car in addition to the Foamite engine are four 2 $\frac{1}{2}$ -gal. extinguishers like those previously described, a box of sand and another containing shovels, picks, axes, saws, hatchets, bars, nails and a sledge. These boxes are kept locked and sealed but are easily broken open if necessary.

It is felt that this fire fighting equipment is necessary for the maintenance of any electrically operated mine. But in addition there are installed over 30 automatic reclosing section circuit breakers, together with several hundred sectional line switches. These aid greatly in coping with fires but naturally cannot be classed as fire fighting equipment.

On the surface, equal protection is provided. Numerous fire hydrants and hose houses are scattered



End View of the Headframe and Tippie

The structures here shown are of a decidedly permanent character, being built throughout of steel, concrete and glass.

This is a skip-hoisting plant and the shaft lining has been carried up from the ground landing or collar to the point of dumping.

This forms an inclosure or shroud in which the two skips operate. This also stays both the headframe and tippie against vibration.

throughout the town. Each hose house stores 200 ft. or more of rubber lined hose and is inspected weekly. The fire hydrants are oiled and flushed once every 6 months. A motor fire truck is given weekly inspection. Alarm buttons in glass faced boxes are mounted on numerous electric light poles. These are connected to a large siren used as a fire alarm only. It can also be operated from the mine office should anyone sending in an alarm be nearer a telephone than a signal box.

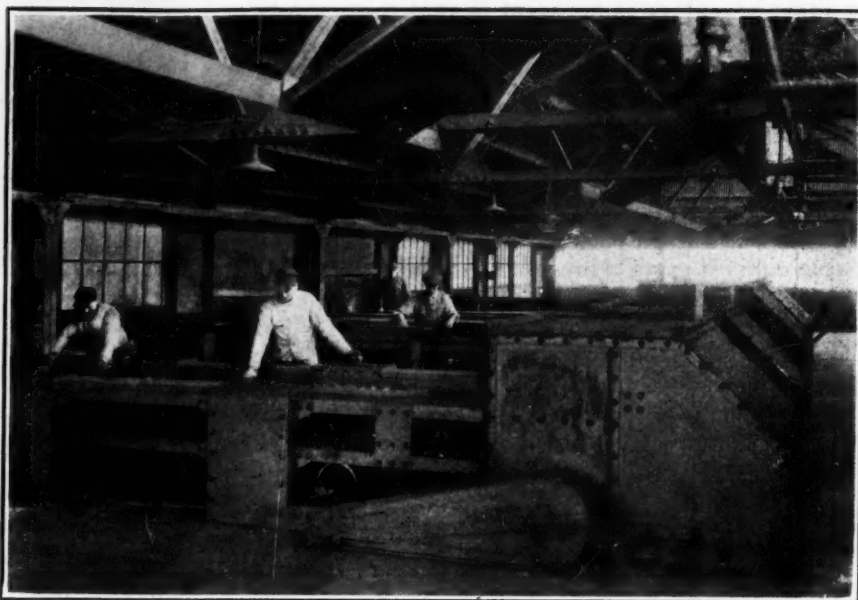
The lamphouse at this operation is considerably larger than is found at most mines. It is double, that is, lamps are distributed on either side and its arrangement is such that 1,000 men can be handled in 30 min. The men enter, receive their lamps, punch the time clock and proceed to the shaft without back-tracking or confusion.

At the shaft, the only mine elevator system for handling men, so far as I am aware, is installed. This elevator is operated like those in any office building, the power plant being in the hoisthouse. It will handle men as fast as the lamp house and it eliminates both top and bottom cagers or gate men. It is equipped with a telephone and electric lights.

The lamp house basement is an open, well lighted floor divided into two large rooms. One is the first aid station and has a section for equipment. This includes 10 sets of mine rescue apparatus, all mounted and ready for instant use, together with an oxygen pump, additional tanks, life line, portable telephones, gas testing equipment, etc. The main portion of the room is used for first aid lectures.

The second room is an air tight compartment in which the various rescue crews undergo their training. It is equipped with an exhaust fan for removing the noxious air after a training period. Formaldehyde is usually burned to create "atmosphere."

Two tipples have been built. One is at the slope



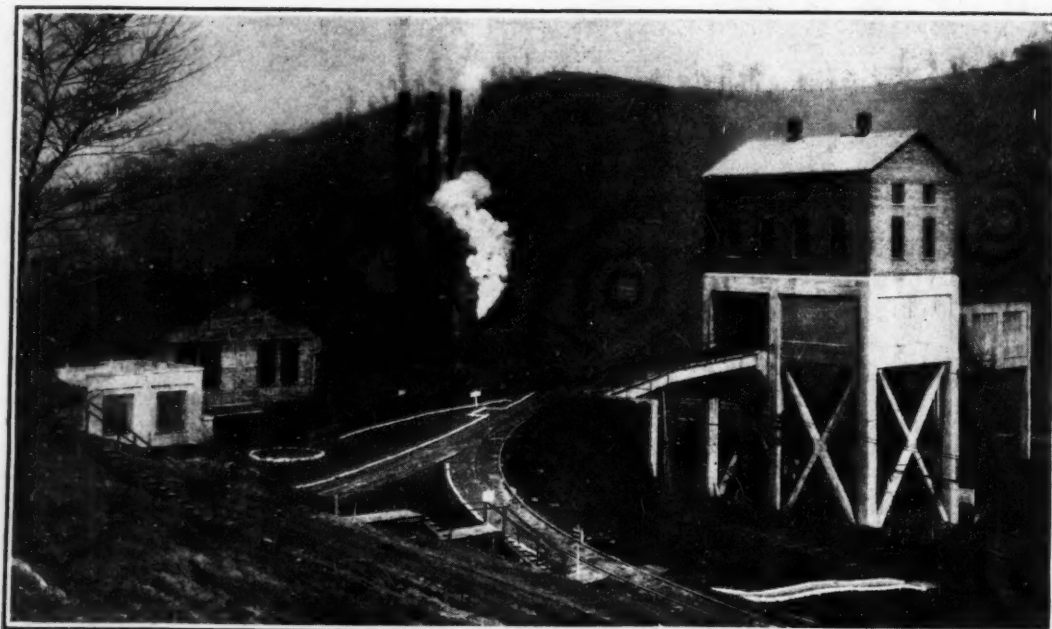
Picking Tables in the Tipple

Several things are worthy of notice in this illustration. Thus, the discharge ends of the tables are inclosed, as is also the driving machinery. Refuse chutes, to receive the pickings, are placed close beside the tables where they can be readily reached by the pickers. It should also be noted that electric lights, provided with reflectors, furnish ample illumination when daylight falls.

and is used for rock and domestic coal or any other material that it is desirable to segregate. The other is at the skip shaft and handles the great bulk of the tonnage.

The slope itself for several years served as the main opening. The haulage rope leads up the slope, passes around a vertical sheave and back to the engine house which is above the tipple, on stilts as it were. This construction was made necessary by the local topography and the proximity of the river. The entire structure is of steel and concrete with the surmounting engine house of brick. Two bins are provided, one under each rotary dump. These dumps, unlike those at the shaft bottom, operate singly as one is for slate and the other for coal.

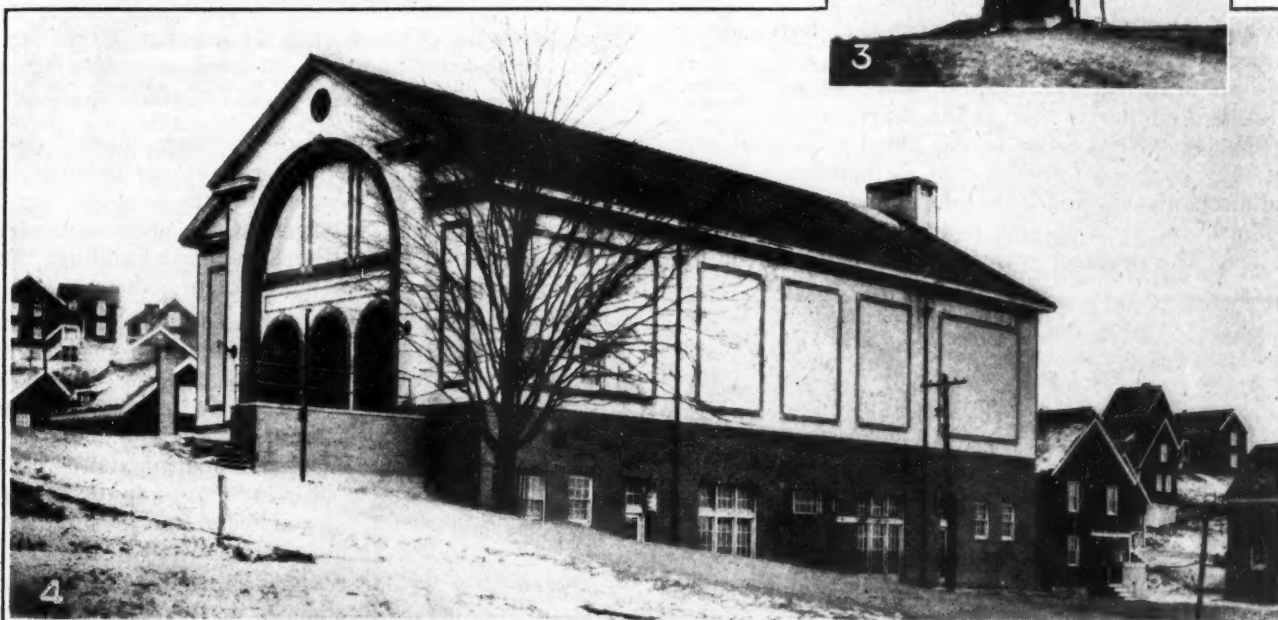
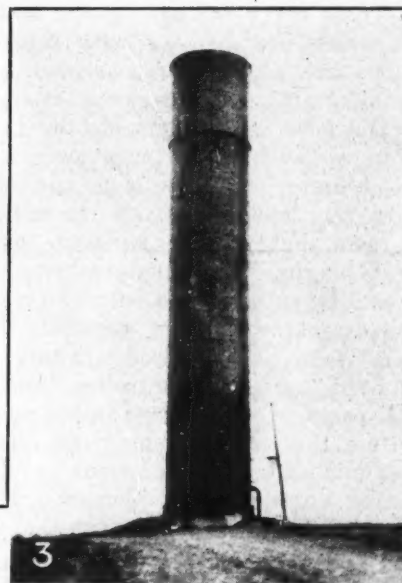
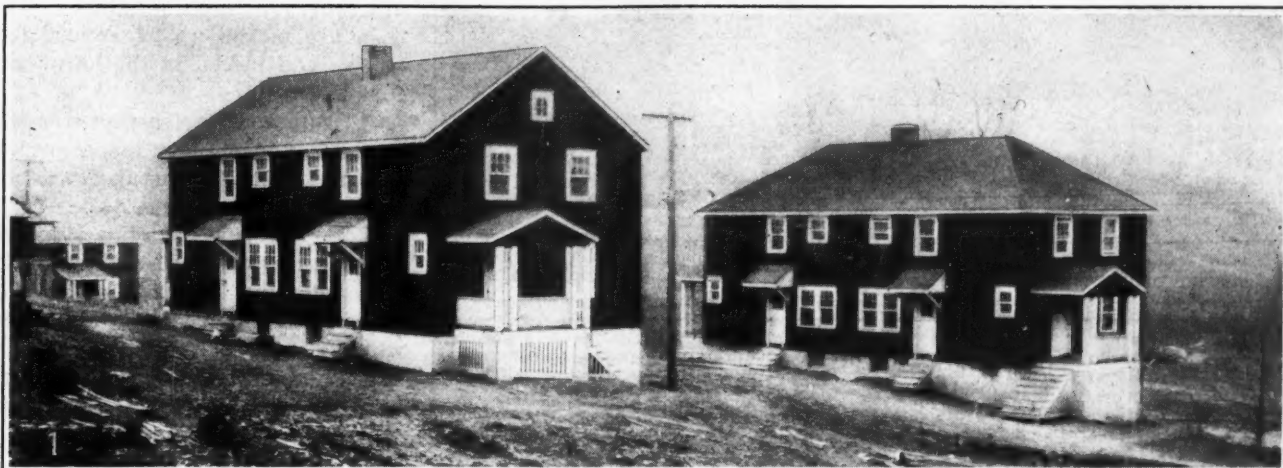
The shaft tipple is far more pretentious. It is built of steel with corrugated asbestos sides and roof. A concrete shroud separating the skipway from the tip-



Slope Tipple

This tipple is of permanent construction, but is far less elaborate than the one serving the shaft. It is peculiar in that the hoist engine is placed on top of the structure, the rope making a turn around the head sheave and passing thence to the drum. The hoist is practically on stilts. This tipple is ordinarily used only for house coal, slate disposal and other materials that it is desirable to segregate.

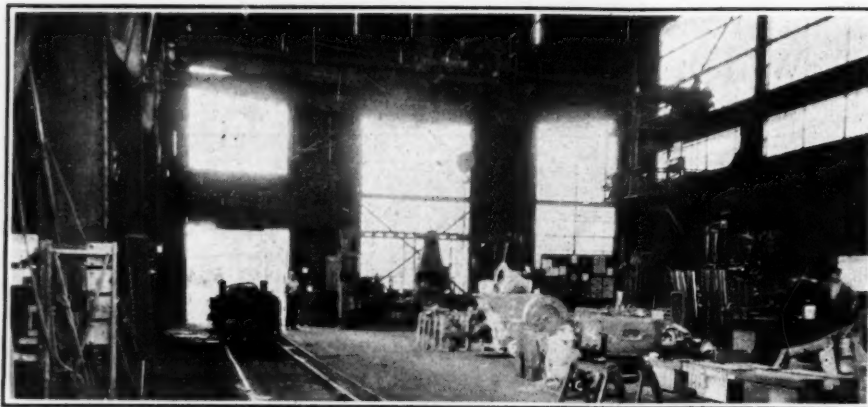
Some of the Structures Which Grace the Town of Nemacolin



1. Two-Family Dwelling Houses. In many mining districts the two-family house is preferred by the workmen. This is also a cheaper dwelling for the company to build than is the one-family house. 2. Five-Room Dwelling. Some

men prefer the detached dwelling and for them these cozy five-room cottages have been constructed. 3. Stand-pipe. A hilly country always affords a good opportunity for water supply as the tank or stand-pipe may be placed on an ele-

vation, thus assuring ample water pressure. 4. Amusement Building. No modern mining town today is without its amusement hall. This usually houses a movie theater and frequently a billiard-room and barber shop.



Interior of Machine Shop

As will be noted this shop is large, commodious and well lighted. It is generously equipped with suitable machine tools such as lathes, planers, drill presses, shapers and the like. The whole width of the building is spanned by a traveling crane.

ple is continued upward from the shaft head to the dumping point 110 ft. above. The skips discharge into a receiving bin under which are two pan feeding conveyors. These carry the coal to the main chutes, the floors of which are grizzlies with screen bars 1½-in. apart. The smaller sizes drop through while all material passing over this screen is classed as lump and goes to the lump picking tables. The undersize flows to shaking screens which separate it into two sizes, egg and slack. These are separately conveyed through the picking room, but neither receives further cleaning at this time. Six conveyors—two lump, two egg and two slack—feed onto two mixing conveyors extending at right angles to them. These carry the coal to the loading chute. All motors in the tippie are controlled from one horizontal panel or switchboard in the picking room. Here the tippie foreman can observe all movements and stop operations or signal the hoisting engineer in a moment. He is also connected with the dumper at the shaft bottom by telephone.

At the railroad car loading chute an arrangement similar to that at the shaft bottom is provided. Here a car feeder fitted with steel ropes that may be hooked to the cars is installed. The car haul mechanism is under the surface between the tracks and is driven by a 150-hp. motor. As the yard tracks are level the operator has perfect control of the cars

is of turntable construction and by means of its plated belt can discharge the refuse 35 ft. from the center of the track.

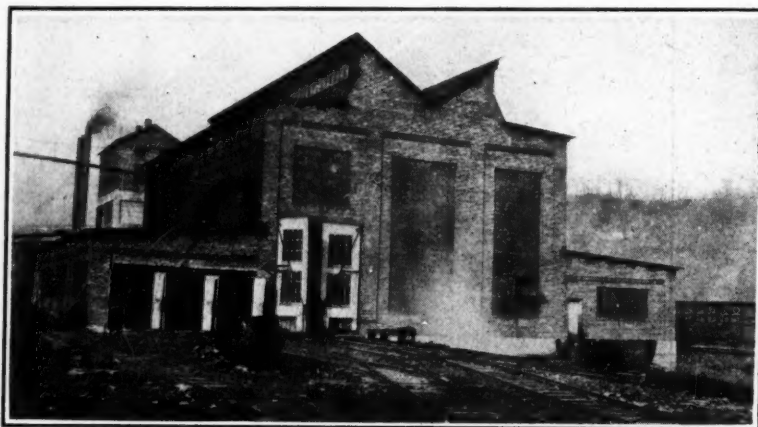
The machine shop at this mine is modernly and adequately equipped with lathes, traveling crane, drill

and can move them in either direction at will.

After loading, the cars drop by gravity over the scales where they are automatically weighed. They then are picked up by a yard locomotive and placed in the lower yard for shipment.

All equipment is inspected weekly by a plant machinery inspector. By this means possible break-downs may be anticipated and forestalled.

Slate is taken from the slope tippie in a larry of 21 tons capacity. This operates by third rail contact while in the plant yard, after leaving which it moves by overhead trolley to the dump a mile away. This larry



Exterior View of the Machine Shop Building

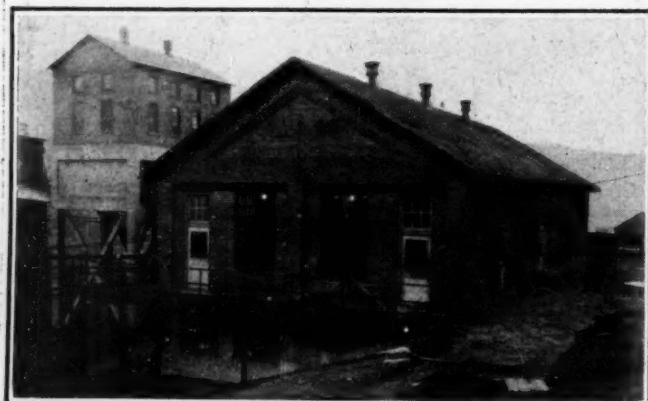
Present-day shop construction demands an abundance of light. Note the unusually large windows in the end of this building, as well as in the side and the saw-tooth roof. Even the main doors are provided with glass.

presses, milling machine, wheel press, shaper, power hack saws, forge blowers, water stills, air hammer, etc. The storage battery locomotives are brought out by way of the slope and charged at the shop each night. A mine car repair shop adjoins the main building. This segregates work on the cars yet keeps it near the shop.

The emergency hospital is a well lighted frame building with an operating room, sterilizing room, a four-bed ward, nurses' room, bath rooms, etc. Two physicians, with a day and a night nurse are in attendance. Each employee, immediately upon receiving an employment slip, must undergo a physical examination and be passed by the doctors before the slip is honored by the pay-roll clerk. This examination is conducted in a hospital room, especially designed for the purpose.

A clubhouse with accommodations for 13 people is located close to the plant office. It is properly equipped and maintained.

A brick road has been built, at a cost of \$50,000, to connect the plant with the town which is on the hill above. The houses there located are probably a step ahead of those erected at most mines and the layout was classed by the U. S. Coal Commission as No. 1 in every respect.



Nemacolin Lamphouse

This building is larger than most of those ordinarily constructed at mines. It is double; that is, lamps may be received or given out upon either side. The men move continuously in one direction without back-tracking or delay, with the result that 1,000 miners may be given their lamps or may turn them in in half an hour.

Coal Bursts from Working Face at Gallup, N. M.; Is the Cause Chemical Action or Stress?

At the Largest Mine in New Mexico, Coal, When First Cut, Flies from Bed in Splinters with Loud Booming Noise, Often Making It Unnecessary to Use Explosives—Roof Expands When Exposed to Air

By R. Dawson Hall

Engineering Editor, *Coal Age*, New York City

MANY UNUSUAL PHENOMENA may be noted in the coal of the Rocky Mountains, due apparently to the fact that it is of more recent deposition and less matured than that of the eastern part of the continent. Among these phenomena may be mentioned the presence of a resinous constituent in the coal of Carbon County, Utah, and in parts of British Columbia; the inclusion of nigger-head or onion-shaped chunks of coal in one of the seams of southern Colorado; the outbursts of gas and dust at the Cassidy mine on Vancouver Island and at the Morrissey colliery in another part of British Columbia and the extreme flammability of the dusts of many of the Western operations.

Western mines, progressively from Illinois onward, show also a tendency toward spontaneous combustion from which Eastern mines are relatively free. Prehistoric crop fires, some more recent and a few, not even today, wholly extinguished, may be found.

There are other noticeable features of purely geological nature. Dykes cut some of the coal beds, and sills obtrude themselves into, above and below the coal, coking and carbonizing it. In the East, on the other hand, dykes and sills in or near coal beds are almost unknown, though a dyke is found in Edenborn, Pa., a number in Saline and Gallatin counties, Ill., and perhaps in other places. These are, however, rare and perhaps are all parts of a single system. Faults of any magnitude rarely occur east of Illinois except in the anthracite region and in the First Basin of Pennsylvania, but in the West they are frequently found.

Other noticeable features are the non-corrosive nature of most of the water produced in Western mines, whenever water is found; the disposition of the rock, as at Dawson, N. M., to swell and break when water is played on it; and the deposition of alkali on the coal faces as at Rock Springs, Wyo.

Not only does the Easterner find the condition of the coal different from that to which he is accustomed, but he discovers great variation in conditions from district to district. In some mines he finds footprints of saurians and in others fossilized wood of a kind that to one not a paleo-botanist seems more of a deciduous than of a coniferous order.

The coal of the West is for the most part in the Mesa Verde formation of

the Cretaceous era. More recent than the Carboniferous, and probably not as a whole exposed to such prolonged tectonic stresses, as were imposed by the great Appalachian uplift, the coals are less matured. They are, except where they have been exposed to the heat of dykes, sills, laccoliths, batholiths, lava flows and like sources of terrestrial heat, much less completely developed than Eastern coals.

CLEAT FRACTURES PRONOUNCED

The Gallup field is an example of an unusual coal deposit. It lies in McKinley County in the northwest corner of New Mexico close to Arizona and between Albuquerque, N. M., and Flagstaff, Ariz., on the Atchison, Topeka & Santa Fé R.R. It is the last coal field on that road as one travels toward Los Angeles, Cal. It occupies therefore a strong position economically.

A little stream, the Rio Puerco of the West flows through it on its way toward the Pacific. The mountains in the field are not high relative to the river valley, though picturesque bluffs occur to the east of Gallup. In these the coal crops. The beds are in two series. In the upper are two important seams 60 to 70 ft. apart, the upper seam being about 4 ft. thick and known as No. 3, the lower 5 to 6 ft. in thickness and known as No. 5. In the Gamarco mine it runs between 5 ft. 6 in and 6 ft. In the lower series are two seams, one 4 ft. thick and the other 6 ft. thick.

The largest and best equipped mine in this region is the Navajo No. 5, or Gamarco, plant of the Gallup-American Coal Co. It is in the No. 5 seam and is operated as a subsidiary of the Nevada Consolidated Copper Co. to which concern belong the Chino, Ray,

Ruth and Copper Flat mines. The American Smelting & Refining Co. is also a party at interest, but the coal is not used solely by these metal concerns. It enters quite largely into the commercial market finding extensive sale in the State of California.

The coal, which is of a bright lustrous appearance and much resembles "splint" in its fracture, has a pronounced cleat and no very obvious bedding planes, so that the lumps detached by mining have their longest axes parallel to the cleat rather than along the bed. This feature may be noted also in



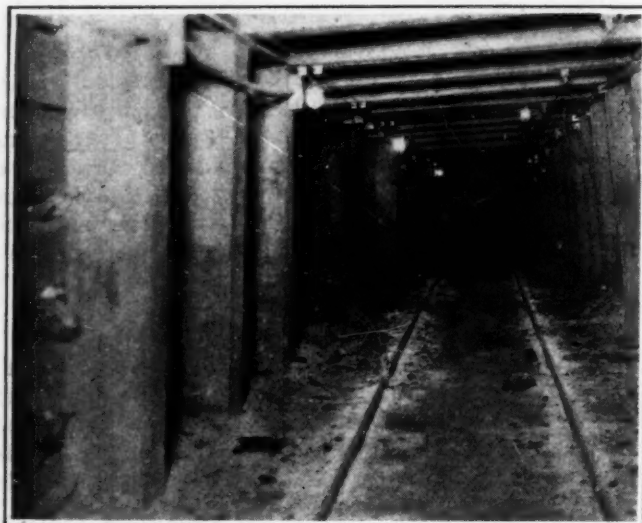
Coal Seam in Navajo No. 5 Mine

Shotfirer is in the act of loading a shot hole. Note the heavy vertical cleavage in the coal and parting near the top of the bed.

the coal at Sublet, Wyo. It naturally causes the coal to work with relative ease on the face.

It does not work well on the butt; in fact it is difficult without the use of a shearing machine to work the coal in this direction. When a shear is made through the coal on the butt, the faces are exposed on either side of the kerf, and the coal spalls from these faces into the space thus afforded. It is, however, no easy matter to shear the coal in this manner.

The nature of the coal is well illustrated by the



Heavy 12x12-in. Posts in Main Haulway

Because of the great weight the roadway has to be timbered as lavishly as the roads in many metal mines. After a time the stress seems to be relieved, but sometimes intermediate timbering must be introduced. The lighting system is worthy of note.

experience with undercutting machines. At one time the Navajo No. 5 mine had four of these. A mine is regarded as a "back number" if it is not equipped with mechanical cutters, and the management accordingly made every effort to continue the use of these devices, but all to no end; their operation proved so unsatisfactory that the equipment was sold. The coal was then mined entirely without mechanical aid and continued to be so worked until the shearing machine was developed. This seemed to have possibilities, and equipment of this type is now being used. It appears likely to give satisfaction especially where places have to be driven on the butt, a direction that has been found so resistant to operation as to make progress difficult.

One trouble with the undercutting machine was that the coal would sit down on the cutter bar making the operation difficult and even dangerous. As the undercut made by the machines was 6 ft. deep and as the coal when cut ceased to serve as a support for the roof, too large an area of the latter was placed under stress. This added to the danger, making the use of undercutting machines undesirable. With hand cutting the coal could be supported at every 3 ft. of advance. These facts will enable the reader to judge the character of the top.

Another sidelight is thrown on the roof by giving some facts as to the methods of developing the mine. The rooms—for the mine is worked on the room-and-pillar plan—were formerly driven 20 ft. wide and at 50-ft. centers, but experience has shown that better results are obtained when the width of the rooms is reduced to 15 ft. They are driven on sights and extended till they are 250 ft. long.

Most of the rooms are driven on the face because that is the easiest way to mine the coal. Many are driven to

the dip. Now that the development has been sufficiently advanced the rooms in some headings will be driven and drawn entirely on the retreat. This should give more satisfactory results than operating on the advance.

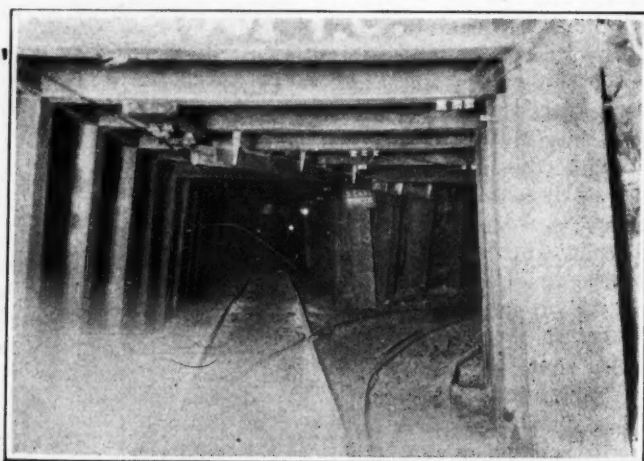
When the coal is exposed, and still more when it is cut, the face breaks off violently in large or small slabs, causing splinters to be thrown from the face. This may be due either to chemical action or to stress from some other source. The flying coal was such a menace that the management insisted on the miners wearing goggles, but the use of these was not without its drawbacks. The men complained that the lenses became covered with moisture, making vision difficult. The miners are now supplied with wire-gauze face masks. These do not have the disadvantages of glass goggles; nevertheless the men at Gamerco do not seem willing to use them.

CUTTING OR SHEARING STARTS EXPANSION

The action of the coal face is not only violent but noisy. The coal frees itself with a booming sound, especially when a cut is made in the center of the face so as to expose the heart of the coal ahead to the action of the air. When, however, the coal has once expanded to a certain point no further movement takes place and disintegration ceases. Consequently, the ribs of the mine stand fairly well. The reader probably will surmise that gas is the cause of the action, but the mine generates little or no methane.

The use of closed lights, which is part of the mine regulations and rigidly adhered to, was dictated more by the danger of fire than by hazard from gas, which is not found anywhere in the workings. In fact, when E. H. Denny and K. L. Marshall on behalf of the U. S. Bureau of Mines and at the request of the management made an examination of the mine on July 23-26, 1924, open-flame carbide lamps were being used by the underground employees. The Bureau officials reported that in their opinion "the large quantity of timber necessarily used in this mine presents a considerable fire hazard where open lights are used; the use of permissible lamps would lessen this hazard. The heavy bursts of coal from the face reported to occur occasionally may also stir up a dense cloud of dust that an open light might ignite." That report, which I am permitted by the management to quote, caused the Gallup-American Coal Co. to install electric lamps.

Not only the coal but the roof and bottom swell and offer problems to the management. In fact it may be



Heavy Timbers at Fifth East North

This shows the Empty Track North with a switch to the right. The trolley line is well protected by a guard. The timbers are held in place laterally by a strong stringpiece near the roof.

this swelling that brings pressure on the coal, causing it to spall. But it would seem that any holing in the coal could not make either roof or bottom oxidize and thus swell unless the cut exposed either one or the other to the air. The booming and the bursting, however, occur when the cut is made in the heart of the coal away from both floor and roof.

The holing, of course, weakens the coal and thus may cause it to break if under strain and if it is mere physical and not chemical stress that breaks it down it must be there before the coal is broken or the mere shearing or pocketing of the coal in the center of the seam could not cause it to fall. All this seems to show that the coal is under unusual compressive stress as it lies in the bed, though this stress may be increased after the coal is taken out as is shown by its effect on timber.

What is this stress?

Is it due to unsatisfied strain resultant from tectonic pressures? It is interesting to note in this connection that it does not seem to be even partially a lateral stress. Is it due to the fact that the coal lies in a trough and weight is coming from the sides of the syncline? Here it may be noted that the basin does not have heavy side slopes. Is it due to past chemical action in roof and floor? Is the disintegration due to the escape of carbon dioxide or moisture? The emission of the former is not reported. It seems

possible that moisture is emitted, for the air of the mine is quite heavily laden with water vapor despite the fact that the mine is relatively dry and that the air entering it is far from saturated as is all the air in the Rocky Mountains.

The roof and floor do not fly or boom like the coal, but this may be due to the fact that they do not have the brittleness of the latter and to the fact that the former have no cleat. It does not seem impossible that the action may be analogous to that found in all sub-bituminous coal, magnified, of course, by a peculiar condition of this particular seam. All coal of this kind decrepitates on exposure, and in the Gallup mine this decrepitation may be developed more than in other places.

In an accompanying table is given analyses of the crushed slack from this mine. The coal as it comes from the bed has a somewhat higher percentage of moisture, the Bureau of Mines figures for McKinley County coal under fair depth running from 9.13 to 16.17. It is clearly sub-bituminous; consequently its action may be merely a particular case of disintegration in the presence of air.

Little rosin can be found in the coal of Navajo No. 5. It was said that some mines in the Gallup field contain much more than others. In the seam can be found limbs of trees, still smooth and shiny, resembling their

modern counterparts closely. They are not replacements and are only slightly changed in appearance by time and long burial. These limbs appear to be from deciduous trees. After being brought to the surface and allowed to stand a day or two they begin to break up but can be preserved for long periods of time by a coat of shellac.

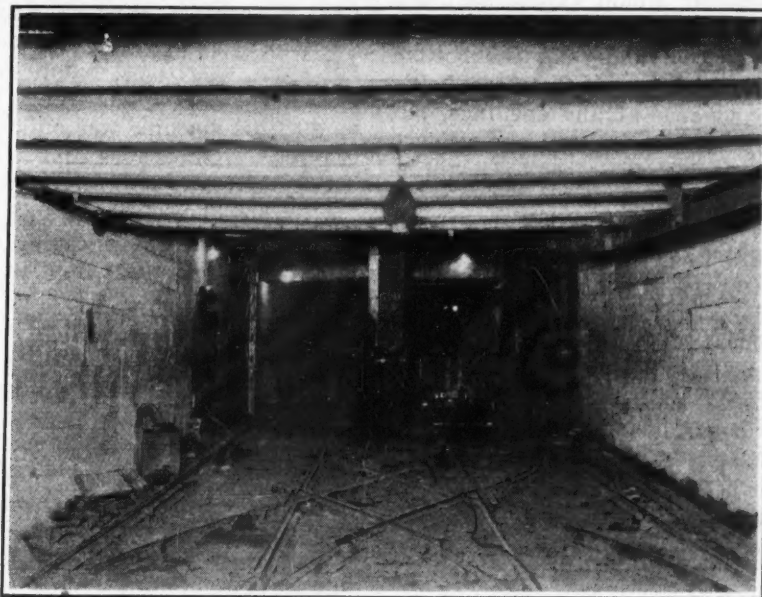
Where the roof at Gallup is of sandstone, especially where it has a rough and conglomeratic appearance on its under surface, there is scarcely any trouble. On the boulders of the conglomerate may be found a marked efflorescence that on careless examination looks like fungus but is really crystalline. No analysis has been made of this material, but it seems possible that this is the chemical substance that in weaker measures causes the pressure on the coal of which mention has been made.

On the south side of the mine the sandstone lies immediately over the coal, but on the north side a gray shale of varying thickness interposes itself between the coal seam and the roof. This is troublesome material. As soon as the air strikes it, it begins to bring a tremendous pressure to bear on the timbers. It is evident that the timber has to bear a greater pressure than that which the weight of the shale alone could possibly impose.

Consequently if this loose rock is the cause of the pressure and does not merely transmit it, it cannot

be regarded at all in the same light as an ordinary drawslate. When a measure begins to expand it may bring on the timber a far greater weight than that of the entire superincumbent measures, for the overburden itself resists being bent or sheared upward, and that resistance may be added to the weight. However, it is not safe to assume that a load of such proportions comes on the timber, but, whatever it is, it suffices to break even substantial posts and cross pieces.

So much trouble was experienced on about 50 per cent of the main haulageways that it was decided to



Bottom at Man-and-Material Shaft, Navajo No. 5

Much pressure was experienced at the foot of the shafts, which were about 765 ft. deep. The trouble at this point foreshadowed the difficulties which were to be confronted later. Steel beams and solid walls keep the roof under control.

Analysis of Navajo No. 5 Coal, Crushed Slack

	As Received	Moisture Free
Moisture.....	8.81	.....
Volatile matter.....	36.82	40.38
Fixed carbon.....	46.67	51.18
Ash.....	7.70	8.44
	100.00	100.00
Volatile sulphur.....	0.84	0.92
Fixed sulphur.....	0.07	0.08
Total.....	0.91	1.00
Thermal capacity, Parr calorimeter, b.t.u.....	11,560	12,677

timber them at 5 ft. 4 in. centers with 12x14-in. cross-bars and 12x12-in. legs and to lag them with 3-in. timber.

In some places this did not suffice, and the timber had to be set almost skin to skin. The stresses in the roof seem to be relieved eventually by expansion just as are those in the coal. Consequently, some method of permitting the expansion to take place without allowing the detached material to fall seems to be needed.

PILLAR DRAWING IS EASY

Pillars are drawn by laying track across their ends. A regular break line is maintained, and the coal is easily removed as it is worked on the face. The tendency to burst has gone but the coal mines easily nevertheless. Rarely does it have to be shot.

The depth of the mine at the shaft, it may be added, is only 765 ft. One scarcely would expect so much pressure at such a depth.

To add to difficulties of coal and roof, the bottom heaves in narrow places even where they are being driven in virgin coal in advance of any openings, but this unstable condition seems to be entirely relieved after the bottom has heaved a few feet. The mine makes only a small quantity of water, but what is made assists in the disintegration of the bottom clay. The water soon does its work, however, and, as soon as that is done, the clay ceases to present a problem.

All the difficulties, in short, are in new ground. After a certain degree of movement has taken place the trouble seems to come to an end but meantime the heaviest kind of timbering has to be employed to keep the roof in place. Occasional faults are also encountered.

On the north side many props have to be used in the rooms because the shale is thick and troublesome. About one prop is needed for every 5 tons of coal extracted. Unpeeled pine props are used, which are brought from the Zuni mountains to the north of Gammerco. They are cut 8 ft. long and none are of less than 6-in. diameter at the small end. In some rooms the roof not only needs the heavy timbers described but must be lagged right up to the face.

For entry work 9-ft. crossbars are used of 8- to 10-in. diameter. Where these prove inadequate as they often do they are replaced by dimension timber.

SPONTANEOUS COMBUSTION NOT IN EVIDENCE

Fortunately, so far, the mine has not been troubled with spontaneous combustion, though the old mines of the company now abandoned had no little trouble from this source. The use of permissible explosives exclusively, even for rockwork, is a safeguard taken against the explosion of coal dust and the quite remote possibility of an explosion of gas, but it also serves as a protection against coal ignition. At one time some dynamite was in the company storehouse but it was shipped away to the copper mines, where there is no explosive dust, the management being convinced that permissible explosives are suitable for all mining operations, whether in coal or rock, and much safer than any other. The mine uses little powder, 5,180 lb. being used in August for 32,916 tons of coal or 1 lb. to 6.354 tons and some of this small quantity was used for rockwork. Some men working on the face, even though they may be driving narrow places, dispense entirely with the use of powder.

For so shallow a mine, the temperature is above normal. This is possibly due to chemical action as the

mine is well removed from any fire areas, though the temperature gradient in the West is usually higher than in the East. The U. S. Bureau of Mines found dry-bulb readings of from 68 to 74 deg. Fahr. and wet-bulb readings of from 66 to 74 deg. Fahr. In some dead ends the air reached nearly 100-per cent saturation as shown by thermometer and psychrometer readings and by the profuse perspiration of observers. Since that time a fan motor of larger capacity, which at the time of the Bureau's examination had been ordered, has been installed. Its effect on the temperature and saturation is not known. It probably affects the former only immaterially.

Big Pumps Supplant Water Hoist

The Pottsville shops of the Philadelphia & Reading Coal & Iron Co. have recently completed construction of what is said to be the most powerful electrically-operated centrifugal pump ever designed for use in the anthracite region. Aside from the 500-hp. driving motor, this machine was built entirely in these shops.

It has eight stages and a lifting capacity of 2,000 gal. per minute against a 710-ft. head. The impellers are arranged in four groups of two each, each group operating in a bronze casing weighing two tons. The total weight of the pump, with its motor, is approximately 24 tons.

This pump, with a duplicate unit now being built, will be installed at the Gilberton water shaft, in the Mahanoy Valley, where an ordinary steam water hoist has been in operation for years. This battery of pumps will be under complete automatic control, using a system devised by the company's own engineers. It will not be necessary to use both pumps continuously, although in normal times both will be required at intervals. If continuously operated, each machine would lift considerably more than a billion gal. of water annually, or in excess of 3,750,000 gross tons. As a matter of fact, each pump can lift more than the amount named, for tests conducted in the P. & R. shops have shown an actual performance of 2,160 gal. per minute. The mere fact that one water-lifting station of one producer is to have a capacity of more than 7,000,000 tons annually is a concrete illustration of the water problem encountered in the anthracite industry. This is far larger and more serious than many people not familiar with the facts will believe.

Explosive Oil Shale Dust

Tests conducted at the Pittsburgh experiment station of the U. S. Bureau of Mines, have demonstrated that some oil shale dusts are explosive, and that their explosiveness increases with their combustible content. The formation of dust during the mining and handling of oil shale is almost unavoidable, and the Bureau considers that the same precautions against dust explosion should be taken in the industries producing or working with oil shales as are taken in safely operated coal mines. The dust produced in Scottish shale mining operations, according to some investigators as reported in the *Iron & Coal Trades Review*, is non-inflammable and non-explosive, but the results of the tests made by the Bureau of Mines show that oil-shale dust may present a source of danger in this country, particularly when comparatively rich material is being worked.

News Of the Industry

Open-Shop Fields Advance Wages As Stiffening of Coal Market Causes Wholesale Resumption of Union Mines

**Pittsburgh Coal Co. Leads Move, Closely Followed by Other
Operators in Smoky City District, Connellsville,
Panhandle and Kanawha**

After efforts extending over more than a year to establish the 1917 wage scale in the Pittsburgh district, the Pittsburgh Coal Co. has abandoned the attempt with the announcement of new rates carrying increases for many classes of workers. The new scale became effective Oct. 27. Pressure exerted by the rapid reopening of mines by other companies in the neighborhood paying the Jacksonville wage scale, which has tended to cause a scarcity of open-shop miners, coupled with a desire to share in the present run of orders for export coal, is responsible for the move.

This action by the Pittsburgh Coal Co. was taken just a few days after an official had declared to a *Coal Age* representative that the company was "not considering taking such action, and was not likely to do so."

The trade in the Pittsburgh district was not surprised at the announcement, as the officials of other companies believed that the 1917 wage scale would be unable to stand the strain of "periodic coal trade prosperity."

Some Rates Top Union Levels

While the new Pittsburgh Coal Co. scale is now brought in the neighborhood of the Jacksonville rate there are a number of differences. The company describes them in its announcement as follows: "Increases to loaders, machine men and pick miners bring their tonnage rates to approximately 5 per cent more than the Jacksonville agreement. Drivers, motormen, track layers, wiremen and timbermen are given from 15 to 25c. more per day than similar rates in the Jacksonville scale. Proportionate increases have been granted to all other workers."

The broken relationship between the Pittsburgh Coal Co. and United Mine Workers officials, however, will exist as heretofore.

The announcement of the company to employees giving the new scale was prefaced by the following statement: "Due to the increased demand for coal for export purposes, and higher prices in the coal market, we hereby announce an increase in wages effective Oct. 27, 1926, so as to share the advance in coal

prices with our employees. The higher prices for coal in the market probably will be only temporary, and when prices drop, wages will be adjusted accordingly."

Following are the new rates in effect, with the differences noted as compared with the Jacksonville scale:

Tonnage Rates*

	Per Ton	Per Ton	Compared with Jacksonville Scale
Loading after machines	\$0.77	\$0.81	+.04
Undercutting with machines	.15	.18	+.01
Pick mining	1.10	1.18	+.08

Yardage and deadwork rates to be increased accordingly.

*The first set of figures is for Banning No. 1 and No. 2, Euclid and Somers No. 4 mines, and the second column is for the eight other operations of the company. Variations between the two sets of mines were recognized under the Jacksonville scale as well.

Day Labor Rates

	Per Day	Compared with Jacksonville Scale
Inside:		
Drivers	\$7.75	+\$0.25
Motormen	7.85	+.25
Snappers	7.75	+.25
Track layers	7.75	+.25
Track layers' helpers	7.40	+.15
Timbermen	7.75	+.25
Timbermen's helpers	7.40	+.15
Wiremen	7.75	+.25
Wiremen's helpers	7.40	+.15
Trappers	4.50	-.18
Other inside labor	7.40	+.15
Outside:		
Dumpers	7.00	+.08
Pushers	6.25	-.43
Car trimmers	6.75	-.11
Railroad car cleaners	6.50	-.10

Other outside day labor rates to be increased.

Washington and Westmore- land Counties Boost Pay

The Lincoln Hill Gas Coal Co., in Washington County, posted notices at the mines last week increasing the wages of 400 open-shop miners approximately 35 per cent. The advance was made immediately after the Pittsburgh Coal Co. announcement. J. G. Hoffstot, general manager of the company, in announcing the pay increase, said it was due to the impetus given the coal industry by increased export trade. Ma-

Southern Illinois Breaks Into Overseas Coal Trade

A prominent southern Illinois operator has closed a contract with a Continental European buyer for 65,000 tons of mine-run at a reported price of \$2.75 for shipment via New Orleans. This is the first order of its kind in the history of the Illinois coal industry. Additional export business is now under negotiation in the Chicago market as a protest against high prices on Eastern coals at Tide-water.

chine loaders were advanced from 59 to 82c. a ton and pick miners from 93c. to \$1.17. The pay for skilled mine laborers was increased from \$6 to \$7.85 per day.

Operators in the non-union Westmoreland County field also posted notices that, effective Nov. 1, a raise in pay would be given the miners. The action was taken to forestall drawing of the men from the mines by concerns which had gone on a higher wage basis in the Pittsburgh district. Among the companies posting the advance were the Keystone Coal & Coke Co., Greensburg Coal Co., Irwin Gas Coal Co., and the Berwind White Coal Mining Co.

Increases in Indiana County

Notices of wage increase were posted on Oct. 27 by the Jefferson & Indiana Coal Co. and the Merrimac Coal Co., which some time ago leased a number of operations of the Rochester & Pittsburgh Coal & Iron Co. in Indiana County, Pennsylvania. The new scale, made effective on Nov. 1, puts the wage rate on the basis of the 1924 scale. The mines affected are the Lucerne, Iselin, Whiskey Run, Coy, Waterman, Luciusboro, Coal Run, Virginia, Tide, McIntyre, Ernest and Fulton Run, and the Adrian mine, in Jefferson County. Increases also were announced by the Merrimac company at Yatesboro and Nu Mine, both in Armstrong County. Similar notices were posted at the mines of Sutter & Rinn Coal Co. at Sagamore, Armstrong County.

John Brophy, president of District No. 2, United Mine Workers, called a strike of all non-union miners in this field, directed chiefly against the companies enumerated, to be effective on Nov. 1, coincidentally with the advance in pay.

Independent Coke Producers Adopt Frick Rate

Independent operators in the Connellsville field have granted an increase in wages to their miners, effective immediately, which puts them on a par with the Frick scale. Economic pressure caused by the increase in wages granted to miners on all sides of them was responsible for the increase.

The scale, paid by the H. C. Frick Coke Co. subsidiary of the United States Steel Corporation, is based on a day labor rate of \$7.55 per day. The independents had been paying \$5 per day.

The independents who have posted the new wage include the Hillman Coal & Coke Co., W. J. Rainey, Inc.; Washington Coal & Coke Co., Consolidated Coal & Coke Co., Mather Collieries Co., Crucible Steel Co., Pittsburgh Steel Co. and Buckeye Coal Co.

A wage increase of approximately 15 per cent was granted the miners of the Hillman Coal & Coke Co. and the Penn Smokeless Coal Co. at Jerome, Pa. About 600 are affected by the Hillman increase and 200 by the other company.

New Fairmont Scale Adopted; All Rates Advanced

Following a unanimous agreement last Friday between delegates of fourteen employee associations of the Consolidation Coal Co. and the representatives of the company, a new wage scale, to be known as the Fairmont scale, was adopted. This provides for an increase of about 20c. a ton on the mining rate and of about \$2.12 a day to the men paid by the day, or an increase from \$4.60 to \$6.72. After it had been ascertained that the employees of the Consolidation company had agreed to the proposed new scale, a conference of representatives of all the larger non-union companies in northern West Virginia was held and it was agreed to put the same scale into effect at the mines of these companies, beginning Nov. 1.

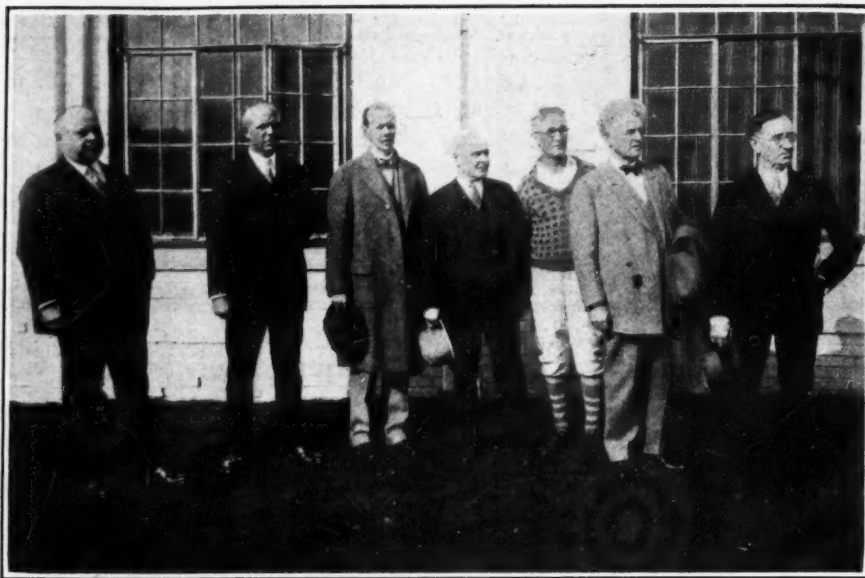
More than 20,000,000 tons of northern West Virginia coal production was represented. It is stated that more than 25,000 miners and mine laborers will be affected by the advances.

Kanawha Miners Raised To Jacksonville Rate

Open-shop mine workers in the Kanawha district received notice Oct. 30 of a wage increase effective Nov. 1. The action, taken at a meeting of operators, put into effect a scale based on the Jacksonville agreement.

The rate for motormen and machine runners under the new scale was increased from \$4.64 to \$7.18 per day and trappers from \$2.57 to \$3.65 per day. Coal loaders were advanced from 43c. to 63c. per ton and cutters from 10c. to 14c. per ton.

The Valley Camp Coal Co. has announced an increase in wages approximating 30 per cent to 3,000 of its men in mines of six Ohio counties. Joseph



Kanawha Coal Operators at Annual Meeting

A group of officers and directors of the Kanawha operators' association snapped at the Kanawha Country Club, Charleston, W. Va., Oct. 21. Left to right: F. O. Harris, director; D. H. Morton, president; E. M. Merrill, director; D. C. Kennedy, secretary; John S. McKeever, director; John Laing, director, and W. C. Mitchell, director.

Arkwright, general manager at Wheeling, W. Va., was quoted as saying that 20 independent companies in that district would take similar action.

Officials of the West Virginia & Pittsburgh Coal Co. in Brooke County, West Virginia, have announced an increase of 20 per cent to 2,000 men.

Abandon Ohio Fight Against Jacksonville Scale

While neither officers nor directors of the Ohio Coal Operators' Association have made formal announcement on the subject, it is generally believed that the operators will abandon their attempt to fight against the Jacksonville scale. Conditions have changed to such an extent in the past two months as to make any fight against the present wage scale ineffective and abortive. What the operators want at this time is more labor at the scale in order than they can increase output and take advantage of soaring prices for coal.

The Ohio Coal Operators' Association has been quiet for several weeks. The announced meeting of the board of directors in Columbus several weeks ago was called off indefinitely at that time and nothing further was done to call a special meeting. Now secretary, John S. Jones, announces that the board will meet, probably in Columbus, Nov. 10, unless a change is made prior to that time. Questions of policy to be followed when negotiations are started with miners' committees, to renew the present scale which expires April 1 will be discussed.

The operators, it is announced, are still of the opinion that they will not join in a four-state conference as has been the custom in years past. They will insist to the point of keeping their mines closed that Ohio operators and miners negotiate as a state without reference to the conditions prevailing in western Pennsylvania, Indiana and Illinois. They claim that conditions in Ohio are peculiar to that state and that it is logical to meet as a state.

Ohio Fact Finders to Probe Coal Depression

The Ohio coal mining committee, composed of representatives from every part of the state and including well-known bankers, business men and engineers, sponsored by the Ohio Chamber of Commerce, organized to investigate the recent depression in the coal industry in the Ohio fields, got down to business at the Columbus Athletic Club, Oct. 22, following a luncheon. At the first meeting the committee resolved itself into a fact-finding commission and decided to conduct hearings in the coal fields to "get the salient facts concerning the present plight of the industry."

Miners, operators and the public will be asked to send representatives to present their views. Two meetings are planned—one in the eastern Ohio fields and another in the southern fields. It is hoped that the findings may be made by Jan. 1. The first hearing probably will be held at Steubenville, Nov. 8.

The committee expects to determine "what ought to be done" and "how to get the warring factions together for the public interest."

Karl S. Dixon, Zanesville, secretary of the committee, said that the present resumption of operations in the coal fields is only temporary, indirectly due to the British coal strike, and "does not solve the situation."

Samuel S. Wyer, chairman, said the solution must be permanent and not one momentarily relieving the situation.

Several of the committee members expressed the belief that a coal "czar" similar to the motion picture and baseball czars would be useful in governing the Ohio coal industry.

The Department of the Interior has authorized sale by auction of coal leases on 320 acres of public land in Cascade County, Montana; forty acres in Park County, Wyoming, and 80 acres in Routt County, Colorado.

Whether Slump in North's Lake Trade Is Due to Freight Rates or Wage Scales Hotly Debated at Washington Hearing

By Sydney A. Hale

Associate Editor, Coal Age

Are wage scales or freight rates primarily responsible for the decline in lake tonnage from the Northern fields?

The war of words over this disputed question was waged hotly by opposing witnesses and counsel at Washington last week in the second series of hearings in Docket No. 15007, *Lake Cargo Coal Cases, 1925*, before Interstate Commerce Commissioner Hall and Examiners Gerry and McGrath. Spokesmen for western Pennsylvania and Ohio insisted that the decline in tonnage long antedated any great disparity in rates between union and non-union fields. Defense witnesses retorted that the sharper decreases had come after the non-union fields returned to the 1917 scale.

This same group also asserted that it was no easy task to sell coal for the lakes in competition with the Northern fields. Part of the tonnage success of the southern West Virginia and eastern Kentucky mines, however, was attributed to greater mechanization and more elaborate preparation equipment. Lower railroad transportation costs via the Southern lines again were emphasized.

Truman H. Dodson, formerly vice-president in charge of operations for the Pittsburgh Coal Co., subpoenaed as a witness for the Southern intervenors, testifying at the afternoon session Oct. 26, refused to characterize the modernization program undertaken by the Pittsburgh company as anything more than improvements any organization desirous of keeping abreast of the times would make. Questioned in detail about an appeal to miners to accept work under the 1917 scale, he denied that wages had been the only handicap of the Pittsburgh district.

Why Appeal Was Made

This appeal, he explained, had been made at a time when preferred districts were underselling Pittsburgh \$1 per ton. The wage reduction, it had been estimated, would cut production costs 45c. Existing rate differentials gave Pittsburgh another 25c. and operators had hoped the Commission would widen these differentials by at least 30c. more and thereby put Pittsburgh on a competitive basis with the preferred districts.

W. E. Tytus, general sales agent, Sunday Creek Coal Co., stated that southern Ohio wanted an adjustment which would recognize its geographical location. He did not think it right that the Hocking field should pay 8.5 mills per ton-mile for a one-line haul over a road for which such low operating costs had been claimed while competitors in the South paid 4 mills for a two-line haul to the lakes. Since the Chesapeake & Ohio had obtained control of the Hocking Valley Ry. southern Ohio had been at a disadvantage. This

inference that C. & O. control had been unfair was attacked by W. S. Bronson, general attorney for that line, who stressed the increase in differentials against West Virginia since the acquisition of the Hocking Valley.

Comparing the changes in relationship between the Northern and Southern districts in recent years, J. J. Ekin, comptroller, Baltimore & Ohio R.R., who was heard Oct. 27, pointed out that lake shipments from the Northern fields during the first seven months of 1923 had been 9,498,337 tons, or 66.48 per cent of the total, and for the corresponding period this year only 3,888,295 tons, or 27.94 per cent of the total. All revenue coal tonnage originated by the Southern lines in 1925 was 36.07 per cent greater than in 1923, while tonnage on the Northern lines had decreased 20.93 per cent.

Mr. Ekin asserted that freight rates were not the controlling factor in this

Pinchot Appoints Golden To Public Service Post

Christ J. Golden of Shamokin, Pa., president of District No. 9, United Mine Workers, was appointed Public Service Commissioner by Governor Pinchot on Oct. 29 to serve out the remainder of the term expiring July 1, 1929.

The appointment was made, the Governor said, "not only because of his wide experience in the class of questions which come before a Public Service Commissioner but more especially because he will represent the rights and interests of the plain people."

"The domination of the majority of the present commission by the public service corporations make it especially important every vacancy should be filled by a man who will be actively on the side of the people. Mr. Golden's remarkable record, his high character and his great ability will give his membership on the commission a very special value."

Mr. Golden has been a leader of the union miners in Pennsylvania for years. Besides heading the district organization, he is chairman of the tri-district board and the anthracite wage scale committee. In recent years he has taken an important part in conferences between the operators and miners.

Mr. Golden was the second commissioner named by the Governor last week, the appointment of Richard J. Beamish, a Philadelphia newspaper reporter, having been made Wednesday.

Hampton Roads Dumpings Break All Records

Hampton Roads coal piers dumped 3,047,333 tons in October, again breaking all records. Dumpings in August, which set the highest previous record figures, amounted to 2,763,013 tons. Dumpings last month by piers were as follows: Norfolk & Western, 1,159,182 tons; Chesapeake & Ohio, 1,100,035; Virginian, 788,116. The Norfolk & Western and Chesapeake & Ohio both broke their own previous high marks.

situation because rates had not been changed since July, 1922, and the sharper drop in Northern tonnage did not start until after July, 1923. The Eastern roads as a whole, he added, are in no position to stand a reduction in coal rates unless other rates are increased.

"Would a reduction in your rates, with no change in the rates from the South, restore traffic to the Northern lines?" asked E. S. Ballard, of counsel for the No. 8 operators.

"Frankly, I don't know."

"If it should restore traffic, would it increase or decrease gross revenues?"

"It would increase them unless the increased business was insufficient to offset the lower rates."

Cross-examined by August Gutheim, counsel for the Pittsburgh producers, the witness said the smaller percentage decrease in all Northern business as compared with the percentage loss in lake trade was due to the fact that the operators enjoyed a greater local market.

"Isn't it a question of the greater differentials to the local markets?" inquired Mr. Gutheim.

"That may or may not be," answered Mr. Ekin.

Return Loading Exaggerated?

N. B. Smith, assistant trainmaster, Pennsylvania R.R., basing his statements on a study of his company's records for June and July, 1923-25, testified that only 30 to 38 per cent of the cars received at Cleveland with lake cargo coal were loaded eastbound with ore and that 13 to 29 per cent of the cars carrying commercial coal were given return ore loads. Complainants, it will be recalled, have claimed a heavy return ore load on lake cargo cars as one of the elements making for lower transportation costs.

The testimony in chief of J. M. Dewberry, general coal and coke agent, Louisville & Nashville R.R., was devoted to criticism of exhibits filed and evidence heretofore given by C. J. Goodyear for the complainants. Among other things, he charged that Mr. Goodyear had failed to use all the comparable tidewater rates cited by the defendants in their rate exhibits and that complainants' witness, by using weighted instead of straight average mileages, had produced higher ton-mile yields.

As bearing upon the question of rates to the lakes, Mr. Dewberry stated that during the years Pittsburgh had an ad-



Coal Operators Play Ancient Game

Golf was a feature at the Kanawha operators' meeting at Charleston, Oct. 21. Left to right: Philip Snyder, D. C. Kennedy, Dr. Gory Hogg and Daniel Prichard.

vantage of 9c. over Kanawha the Northern field had shipped 56.02 per cent of the total tonnage moved to the lakes. When the differential was increased to 19c., Pittsburgh's percentage dropped to 40.02 per cent. Under a 25c. rate advantage, Pittsburgh's percentage of the total lake business has fallen to 22.52 per cent.

Pratt Reverses Position

A. B. Pratt, representing the Northern States Power Co., had Southern counsel on their toes, when he announced that he now thought that special consideration should be given to the permanent disabilities of Pittsburgh and the Ohio No. 8 fields. He had been brought to that conclusion, he said, by listening to the testimony of H. L. Findlay, vice-president, Youghiogeny & Ohio Coal Co., and J. B. L. Hornberger, vice-president, Pittsburgh Coal Co. He offered the Hoch-Smith resolution in justification of this reversal of the position he had taken in the original proceedings. Counsel for the Southern interests, however, insinuated the change was attributable to the taking over of a Pittsburgh public utility by the same holding company which controls the Northern States Power Co.

Transportation costs again came to the fore when the Southern carriers offered G. D. Brooke, general manager, Chesapeake & Ohio, as a Roland for complainants' Oliver. According to Mr. Brooke, total operating expenses per mile of line on the Southern roads decreased from 6.28 mills in 1923 to 5.06 mills in 1925, against a decrease from 8.64 to 8.31 mills on the Northern lines, increasing the advantage of the Southern lines from 2.36 to 3.25 mills, or 38 per cent. Out-of-pocket costs of assembling and hauling coal from the Logan field to the Toledo docks were estimated by the witness at 76.88c. per net ton. Cross-examination by complainants' counsel was deferred.

Mechanization Pays, Says Morton

D. P. Morton, a member of the allotment commission of the Chesapeake & Ohio, presented a series of studies of idle tippie time at West Virginia mines on his road. These studies showed a close trend between prices and running time and also a much higher average of running time in both West Virginia and Kentucky for mines with mechanical screening

equipment than for mines not so equipped. In 1921, for example, 75.4 per cent of the C. & O. high-volatile tonnage came from mines mechanically equipped for screening; in 1922, the percentage was 68.2; in 1923 it was 69 per cent; in 1924 the percentage rose to 79.2 and last year the percentage was 80.

According to W. J. Magee, president, Carbon Coal Co., who testified on Oct. 29, for several years lake buyers have dictated the terms upon which coal could be sold in that market. Competition between the Northern and Southern fields was unusually keen and the witness' company had made little or no profit—and in many cases suffered loss—in the sale of Kanawha coal to the lakes. The experience of the Carbon Coal Co. in this trade, he understood, had not differed materially from that of other Southern operators in the high-volatile fields.

Operating Conditions Contrasted

Wages and mechanical equipment at the mines were emphasized by M. C. Meldrim, mining engineer, who appeared on behalf of the Southern intervenors. Comparing the Jacksonville with the November, 1917, scales, Mr. Meldrim estimated that the former increased the average cost of production 44.7c. per ton. As preliminary to a declaration that the Southern mines had been more successful in the lake trade because they were more modernly equipped than the Northern operations, the witness submitted a series of ex-

Table I—Comparison of Northern and Southern Equipment*

District:	Percentage of Mines Equipped with			Percentage of Mines Shipping More than	
	Mechanical Screens	Picking Tables	Loading Booms	Three	Four Prepared Sizes†
Pittsburgh...	41.1	35.6	31.6	12.8	1.3
Ohio No. 8...	29.2	23.0	16.7	29.0	19.3
Kanawha...	63.0	52.2	46.0	51.0	26.2
Kenova-Thacker...	71.9	66.6	49.3	55.0	20.0
Logan...	77.8	70.5	61.7	66.7	38.9
Hazard...	79.3	52.3	58.0	67.8	46.7
Harlan...	81.8	49.2	68.6	74.6	46.3

*Summarized from exhibits filed before the Interstate Commerce Commission in Docket No. 15007 by M. C. Meldrim. The percentages, according to the exhibits, were based upon examination of reports covering 76 mines in the Pittsburgh district, 62 in the No. 8 Ohio field, 159 in Kanawha, 69 in Kenova-Thacker, 115 in Logan, 90 in Hazard and 67 mines in the Harlan district.
†Mine-run not included as a prepared size.

hibits covering reports on the screening and loading equipment and the number of sizes commonly shipped from complaining districts and from the Southern high-volatile districts. These exhibits are summarized in Table 1.

Want More Complete Study

Objection was made by counsel for the Northern interests that the Meldrim studies had been limited to the mines in the complaining district but purported to show all the mines in the Southern high-volatile fields. The completeness of the survey was challenged. The witness, at the request of Commissioner Hall, agreed to extend his study to take in all mines in the Pittsburgh and No. 8 Ohio fields for which he could get data. The witness could not state which mines in his survey shipped lake coal. He also brought in the question of age and suggested that some of the mistakes made in earlier development should be rectified if the Northern fields wanted to continue on a competitive basis.

C. E. Leshner, assistant to the president, Pittsburgh Coal Co., for whom a subpoena had been issued, was put on the stand by counsel for the Southern intervenors and quizzed on a speech delivered before the Western Pennsylvania Society of Engineers in June, 1925. Mr. Leshner pointed out that at the time that address was made proceedings in the lake cases were pending before the Commission. Therefore, he had dismissed the rate question from discussion. There was, however, no tribunal to which the operators could appeal on wage matters; they must depend for relief from oppressive labor rates upon public opinion since the union had closed the door to discussion. For that reason, the speech emphasized only the labor angle and was an appeal to the public.

Wallace Explains Views

On Saturday George R. Wallace, president, Pittsburgh Chamber of Commerce, was examined by attorneys for the Southern operators on statements made before the Army's rivers and harbors board at a hearing on the Erie Canal during which he had said that railroads were becoming overburdened with traffic and that new transportation facilities were necessary. He explained that this statement was made in a long-range view of the situation, and was not applicable to conditions today.

C. C. Morfit, secretary, Tug River Coal Operators' Association, introduced exhibits in answer to performance charts previously introduced by C. J. Goodyear, secretary of the Pittsburgh Operator Lake Rate Committee.

James D. Francis, vice-president, Island Creek Coal Co., appearing on the stand as chairman of the joint committee of Southern coal operators formed to handle the lake cargo case, testified at length regarding higher costs for preparing coal in the last ten years, due to consumers' demands for greater fuel efficiency, and on other points, summing up the views of the Southern mine operators. He will be cross-examined when the hearing is resumed.

Hearings were adjourned last Saturday to be resumed on Nov. 22.

Industrial Coal Piles Keep Pace with Rising Output

Coal stocks in the hands of industrial consumers on Oct. 1 totaled 43,156,000 tons, according to an estimate by the National Association of Purchasing agents. This was an increase of 2,474,000 tons over the total reserves at the beginning of the preceding month, and this despite an increase in the rate of consumption during September, when 39,244,000 tons was used, compared with 37,152,000 during the previous month. This is accounted for by a rise in output during the month to 57,424,000 tons, against 54,577,000 tons in August. At the rate of consumption during September stocks as of Oct. 1 were sufficient for 33 days.

Estimates of production, industrial consumption, stocks on hand in industries and days' supply in selected lines on Oct. 1 are shown in the following tables:

Comparative Estimates of Output, Consumption and Stocks

	(In thousands of tons)	
	Production	Industrial Consumption
May.....	47,113	36,813
June.....	50,417	35,541
July.....	51,901	36,514
August.....	54,577	37,152
September..	57,424	39,244
Oct. 1.....		43,156

* Subject to revision.

Days' Supply in Selected Industries On Oct. 1

Steel plants.....	21
Electric utilities and coal-gas plants.....	49
Byproduct coke plants.....	30
Railroads.....	31
Other industries.....	30

Mining Firms in Three States In \$5,500,000 Merger

The Blue Diamond Coal Co., having a capital stock of \$5,500,000, has been organized to absorb the Blue Diamond Coal Sales Co. and five coal companies, according to an announcement by the sales company at Cincinnati, Ohio, on Oct. 26. The mines are in southeastern Kentucky, eastern Tennessee and the western part of Virginia.

Alex Bonnyman, of Knoxville, Tenn., is chairman of the board of directors; James Bonnyman, his brother, president of the sales company, will be president. Other officers will be: Fred E. Gore, Cincinnati; H. C. Williams, Middlesboro, Ky., and W. H. Sienknecht, vice-presidents; Robert S. Young, Knoxville, secretary-treasurer.

The Blue Diamond corporation will be one of the largest commercial bituminous coal producers south of the West Virginia fields. The annual capacity of its properties is estimated at 3,000,000 tons. The companies merged are the Blue Diamond, the Bonney Blue, the Royal Blue, the Sapphire and the Liberty coal companies.

The statement also was made that with all participating companies fully financed and with no mortgage debts, no new financing would be necessary.

Leaders Make New Gesture To End British Coal Strike; Baldwin Won't Force Peace

Leaders of the British Miners' Federation late last week made another gesture toward a settlement of the six months' old coal strike when they agreed to submit new proposals for a termination of the suspension to a conference of delegates to be called this week. This decision was the outcome of a protracted meeting at London, Oct. 29, between the executives of the miners' organization and the general council of the Trades Union Congress.

The terms of the new proposals have not been disclosed. It is assumed, however, that they embody district settlements on both wages and hours of labor in the framework of a national agreement. That, in effect, was what the Baldwin-Churchill peace program, rejected alike by miners and mine owners, contemplated.

Hopes that the Federation might enlist the active backing of the government in the new move toward peace have been dashed by the outspoken declaration of the Premier against coercive measures. He said:

"Unfortunately, throughout the dispute the notion has prevailed in the minds of many people—particularly I think, among the miners—that at the eleventh hour the government would step in and make possible such terms of settlement which the economic condition of the industry alone could not provide. There could be no greater mistake. We should only be paving the way for further misunderstanding were we to pretend that we had it in our power either to compel a settlement or, in the present temper of the industry, to secure an agreement."

This declaration, coming upon the heels of a statement by Winston Churchill, Chancellor of the Exchequer, that it was for the miners to make proposals which the government could indorse and carry forward irrespective of the attitude of the coal owners, has had a dispiriting effect upon the extremists in the labor groups. Approximately 25 per cent of the men have returned to work and current production is unofficially estimated at 1,000,000 tons per week.

Upholds Right to Organize Non-Union Miners

Efforts by the United Mine Workers to unionize miners of the West Virginia-Pittsburgh Coal Co. in Brooke County, West Virginia, may be pursued as long as union representatives do not threaten or attempt to intimidate employees of the company, according to a decision on Oct. 30 by the U. S. Circuit Court of Appeals at Richmond, Va. The opinion was delivered by senior Circuit Judge Waddill and concurred in by Judges Rose and Parker.

The opinion upheld the injunction granted by the U. S. District Court at Wheeling, W. Va., with modifications. The modifications provide that no part of the injunction "shall be construed to forbid the advocacy of union membership in public speeches or by the publication or circulation of arguments, when such speeches or arguments are free from threats and other device to intimidate and from attempts to persuade the plaintiff's employees or any of them to violate their contracts with it."

According to a report from Riga, the Soviet authorities have responded to another appeal from A. J. Cook, general secretary of the British Miners' Federation, with a levy of one million rubles on the wages of the Russian workers. At present rates of exchange, this levy is worth approximately \$500,000. This latest donation brings the contributions from Soviet sources to \$4,500,000.

Prior to the conferences with the general council of the British Trades Union Congress, it was reported that Lord Derby, Lord Londonderry and Montagu Norman, governor of the Bank of England, and other influential leaders had submitted a peace program to Mr. Cook. The labor leader declined to commit himself when questioned on this report.



Acme Newspictures

Expansion—If Not Modernization

As the British coal strike drags on, bootleg operations are increasing in number and extent. Unlike most of the workers, who depend almost entirely on manpower, some of those in the Lancashire field, pictured above, have had recourse to horses for hoisting.

September Mine Fatalities Below Total a Year Ago; Big Drop in Hard-Coal Rate

Accidents at coal mines in the United States in September, 1926, resulted in the loss of 170 lives, according to information furnished to the Bureau of Mines by state mine inspectors. Of this number 125 occurred at bituminous mines and 45 in the anthracite field. As the bituminous output of coal for September was 48,976,000 tons, and the production of anthracite was 8,444,000 tons, the fatalities reported represented a death rate of 2.55 per million tons for bituminous mines and 5.33 for anthracite mines. The industry as a whole showed a fatality rate of 2.96 per million tons of coal produced. In September, 1925, the rate for bituminous coal mines was 3.29; the anthracite mines were idle in September last year due to a strike.

During the first nine months of the present year 1,759 men have been killed by accidents at the coal mines throughout the United States, resulting in a death rate per million tons of coal produced of 3.76 as compared with 3.95 for the same period in 1925. Reports for bituminous mines alone showed a nine-month fatality rate of 3.53, which was about the same as the corresponding rate from January to September in 1925. The anthracite rate for the present year, however, shows a decrease of about 17 per cent; that is, the rate has declined from 6.36 to 5.28.

Records covering the first nine months of 1926 show that 12 "major" disasters—in which five or more men were killed at one time—have resulted

Ford 5-Day Week Assailed By Manufacturers

Henry Ford's five-day week, recently put into operation in his plants, and urged by labor leaders as ideal, is uneconomical, impracticable and against the best interests of the ambitious worker, according to members of the National Association of Manufacturers. Included are executives of some of the largest concerns in this country, who state that the plan tends to make industry in the United States vulnerable to the onslaughts of European industry, now working as hard as possible to overcome America's leadership.

Opinions of the manufacturers were made public in answer to a request for a general expression by the association sent to about fifty manufacturers in different parts of the country.

in the loss of 271 lives as against 10 disasters and 199 deaths in the corresponding months in 1925. The fatality rates for these disasters alone were 0.579 and 0.465, respectively.

An analysis of the principal causes of the 1,759 fatalities for the first nine months of the present year follows:

	Year 1925	Jan.-Sept. 1925	Jan.-Sept. 1926
All causes.....	3,811	3,950	3,761
Falls of roof and coal	1,842	1,874	1,758
Haulage.....	.615	.638	.659
Gas or dust explo-			
sions.....	.590	.626	.710
Explosives.....	.174	.199	.137
Electricity.....	.144	.135	.143

Expect Funds for Studies By Bureau of Mines

It is confidently expected that Congress at its next session will vote enough additional funds to the Bureau of Mines to allow it to augment its economic work. If additional funds should be made available it is planned to employ specialists of standing to pursue current marketing, transportation and price studies. In addition it is hoped that additional commodity specialists can be retained.

It is believed that great service can be done the mining industries by transportation studies. Transportation is the limiting factor in the distribution of bulky commodities. Secretary Hoover believes the inland waterways can be used to advantage in reducing transportation costs on such freight.

This is particularly the case since the last of the dams in the Ohio River will have been finished in the comparatively near future. This will open a great fluvial highway through one of the nation's greatest industrial regions. Practically all railroads now make joint rates with water carriers which enable most shippers to get some advantage of the lower water rates. Barge lines have been providing regular service on the Mississippi and Warrior rivers for a number of years. The success which has attended these operations is encouraging plans for the establishment of such service on other streams. This is likely to widen the radius of distribution of many bulky commodities. Just how this new facility can be used to the best advantage is one of the problems it is hoped can be studied.

Coal-Mine Fatalities During September, 1926, by Causes and States

(Compiled by Bureau of Mines and Published by Coal Age)

State	Underground											Shaft				Surface						Total by States				
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal.	Mine cars and locomotives.	Explosions of gas and dust.	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	1926	1925
Alabama.....	1		3								2	6	1				1								7	8
Alaska.....																									0	0
Arkansas.....																									0	2
Colorado.....			1									1													1	6
Illinois.....	3	2				1	1					12			1		1								13	14
Indiana.....	3		2									5													5	3
Iowa.....	1											1	1				1								2	3
Kansas.....							1																		1	2
Kentucky.....	6		1	1								8													8	18
Maryland.....	3		1									4													4	1
Michigan.....																									0	0
Missouri.....	1											1			1		1								2	3
Montana.....																									0	0
New Mexico.....	1											1													1	2
North Dakota.....																									0	0
Ohio.....	5			1			1					7													7	7
Oklahoma.....			1									17													17	1
Pennsylvania (bituminous).....	12	2	5	16						1		20											1	1	21	24
South Dakota.....																									0	0
Tennessee.....	1											1													1	1
Texas.....																									0	0
Utah.....	1											1													1	3
Virginia.....	3											3													3	5
Washington.....																									0	1
West Virginia.....	17		7				4		1			29						1						1	30	49
Wyoming.....	1											1													1	1
Total (bituminous).....	59	4	26	18		1	7		1		3	119	2		2		4		1				1	2	125	154
Pennsylvania (anthracite).....	18	2	5	7	6							43												2	45	1
Total September, 1926.....	77	6	31	25	6	1	7		1		8	162	2		2		4		1			3	4	170		
Total September, 1925.....	87	5	22	8	5		8		3		1	139	1		3	1	5	3	2	2		4	11		155	

Wage Boosts and Mine Reopenings In Wake of Runaway Coal Market Seen in Washington as Lewis Luck

By Paul Wooton

Washington Correspondent of Coal Age

The runaway market in coal, in the course of a very few days, has changed the face of the labor situation completely. The Ohio operators who had been demanding a lower scale suddenly abandoned the effort. Mines that had been closed for eighteen months are reopening with the Jacksonville scale in full force. The Pittsburgh Coal Co. has gone them one better and has posted a notice of an advance which exceeds the Jacksonville rates by 5 per cent. This produced a veritable sensation; it caused more comment in Washington than any phase of the lake rate hearing.

It is recognized that these moves, coupled with the similar action taken in central Pennsylvania, mean that both northern and southern West Virginia must follow suit. Southern West Virginia particularly has been reluctant to take this step as the operators in that section are sold up at low prices and therefore cannot profit materially from the increase. Besides they fear that the rate will have to be put down again shortly.

More than ever the immediate outlook in this country turns on what happens in the United Kingdom. Observers now are much more cautious in their predictions as to when the strike will end. This is particularly the case since indisputable information has been received that the British coal miners are not suffering seriously and seem fully determined to fight it out. No one in South Wales is predicting an end of the strike before Christmas.

A factor in the matter of the ability of the British miner to hold out has not been known in the United States until recently. The various British and international charity associations are expending millions in providing for the families of the miners. As long as the men are relieved of the burden of supporting their families they will have little difficulty in getting along themselves on the money they are receiving from Russia and other sources. Incidentally, they are not receiving much financial support from the United States. The United Mines Workers of America has no spare money. The official treasury has been depleted by the anthracite strike and by the efforts to help unemployed members. Some re-

serve must be built up so as to be prepared if the union has to fight for its life next April.

The British workers also are disappointed because the American union has not done something to hinder the shipment of coal. They evidently are not familiar with the fact that all the export fields have slipped from the grasp of the union.

Despite the failure of the United Mine Workers to contribute to the support of the British strike or to hinder the movement of coal that organization is profiting greatly from the overseas disturbance. It had been waging a losing fight as more and more of the production came from mines paying less than the Jacksonville scale, and then overnight the whole Central Competitive field restored the Jacksonville rates of pay. Apparently this is more of that "Lewis luck" which has stood the doughty leader of the mine workers in such good stead in the past.

Of course the British strike is not responsible entirely for present conditions. In view of the uncertainties of the situation consumers must be putting coal in storage. All exports, including those to Canada, are running less than 1,300,000 tons. With production exceeding 12,000,000 tons it is evident that some 10,700,000 tons is being absorbed by domestic consumers. Definite information on this point will be forthcoming soon, as the Bureau of Mines expects to issue a stock report early in November.

Railway Fuel Cost Slips Again

Class 1 railroads of the United States consumed 7,873,420 net tons of coal in train locomotives during August, 1926, according to the monthly report of the Interstate Commerce Commission. This was an increase of 48,310 tons over the total for the corresponding month of 1925.

The average cost per net ton, including freight, of such fuel in August last was: Eastern district, \$2.56; Southern district, \$2.11; Western district, \$2.93; United States, \$2.57. The difference in the average for the country as a whole from the preceding month was \$0.01 decrease, and from August, 1925, \$0.08 decrease.

Barge Line to Start Next Spring.

Announcement is made that the Inland Waterways Corporation will start a fleet of three towboats and fifteen barges on the Upper Mississippi River between St. Louis and the Twin Cities on April 27 next. A schedule of six-day sailings will be maintained. They will have a 4½-ft. draft. It will be interesting to observe how much use will be made of the river for bringing Illinois coal to the Twin Cities.

Coal Shipments Surpass Record for Five Years

Demand for anthracite and bituminous coal recently has increased shipments to the largest volume in five years, according to a report by the American Railway Association.

From Sept. 1 to Oct. 16 this year, loading of bituminous coal totaled 1,423,135 cars, or 81,183,000 tons, an increase of 50,614 cars, or 3,802,000 tons, over the same period last year. For the week ended on Oct. 16 bituminous-coal loadings amounted to 217,478 cars or 12,376,000 tons, which exceeded the corresponding week in any of the previous five years.

Loading of anthracite between Sept. 1 and Oct. 16 totaled 273,226 cars, or 14,367,000 tons. For the week ended on Oct. 16 it amounted to 41,087 cars, or 2,093,000 tons, the highest for the same week in any year since 1917.

The English coal strike is responsible in large part for heavier shipments, and exports of bituminous coal from Atlantic ports are heavier than at any other time since the war peak, ten years ago.

Coal Conference to Include Popular Evening Session

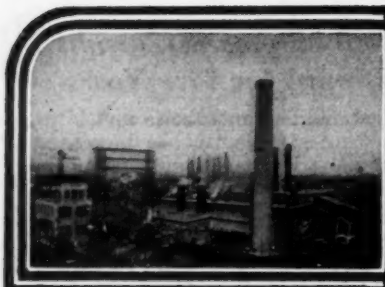
A special evening session planned to appeal to the general public in a somewhat more popular vein than that of the regular technical meetings is to be held during the International Conference on Bituminous Coal at Carnegie Institute of Technology, Pittsburgh, Pa., Nov. 15-18, according to an announcement.

The meeting is scheduled for Monday evening, Nov. 15, and, like the regular day-time sessions of the conference, will be open to the general public.

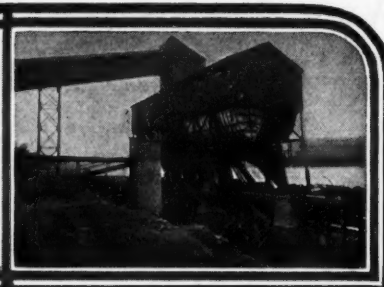
John Hays Hammond, inventor and engineer, will preside at this session and the principal addresses will be given by Walter Barnum, president of the National Coal Association, and Edwin E. Slosson, director of "Science Service." Mr. Hammond and Mr. Barnum are members of the advisory board assisting President Thomas S. Baker in planning the Carnegie conference.

Ships Largest D.-C. Motor.—The world's largest direct-current motor, of 8,000-hp. capacity, has just been shipped from the Westinghouse Electric & Mfg. Co.'s plant at East Pittsburgh, Pa. The motor has a total weight of 625,000 lb. The over-all length of the shaft is 26 ft. 8 in. and the frame has an outside diameter of 20 ft. It is capable of developing a maximum capacity of 2,400,000 ft.-lb., which at 40 r.p.m. is equivalent to 18,300 hp. The motor obtains its power from a flywheel set which consists of two 3,500-kw., 700-volt generators operating at 375 r.p.m. Three 50,000-lb. flywheels are used to equalize peak loads. The set is driven by a 5,000-hp. induction motor. The over-all length of this set is 48 ft. 8 in.

EDITOR'S NOTE—The foregoing Washington letter reflects certain views of official Washington. Due to the fact that policy as a rule prevents government officials from permitting their views being quoted directly, the authority for these reports is necessarily somewhat vaguely referred to. The views reflected are not those of any one group of officials, but of different men, in the legislative and executive departments. There is no necessary connection between their views and COAL AGE editorial policy; neither do they necessarily represent Mr. Wooton's personal views. It is felt that the opinions thus faithfully reflected will be of great interest to the industry. Where opinions are cited from sources outside of the government, the source will be specifically stated.



News Items From Field and Trade



ALASKA

Bondholders Buy Alaska Coal Road.—The Alaska Anthracite R.R. at Katalla, southwest of Cordova, was purchased at Cordova Oct. 10 at a foreclosure sale by Attorney A. J. Dimond, representing bondholders who were said to have acquired \$600,000 worth of bonds. The sale liquidates a \$60,000 indebtedness. It was said that the railroad will be rehabilitated at an estimated cost of \$1,000,000 to carry coal from the Bering River coal fields to Controller Bay at Katalla.

COLORADO

Colorado coal mines produced 941,101 tons in September, according to the monthly report of James Dalrymple, state coal mine inspector. The total output of the state's twenty-one coal-producing counties for the first nine months of this year was 6,852,755 tons, an increase of 177,418 tons over the corresponding period a year ago.

A suit for \$1,020,000 damages against the Oakdale Coal Co. by the Canon-Reliance Fuel Co., charging that the Oakdale company has "wilfully, subterranously and secretly entered and mined upon lands under leasehold" of the fuel company, was filed in the District Court at Denver last week. The suit is brought under an old Colorado mining statute, it is said, which concerns the underground encroachments on one mining concern upon another. The complaint will be set for hearing in the near future.

ILLINOIS

More Mines Active.—St. Ellen mine, at O'Fallon, idle since last February, has resumed operations and is employing 150 men. The Taylor mine, which also is now working at nearly full time, employs 200 men, while the Carbon mine, at Carbon, near O'Fallon, has resumed operations with 130 men.

KANSAS

Western Sinks New Shaft.—The third new deep mine to be sunk in a little more than a year in the Pittsburgh field will be started at once by the Western Coal & Mining Co., one of the largest operating here. The new plant, to be known as Western No. 24, will have a shaft about 200 ft. deep and will work three shifts of men.

New Union Local Formed.—Organization of a second local union of the United Mine Workers has been effected at Osage City, Matt Walters, president

of district 14, announces. An organization campaign recently was launched there by the district officials.

NEW YORK

James A. Hamilton, State Industrial Commissioner, has been named by Governor Smith to represent the State of New York at the international conference on bituminous coal at the Carnegie Institute of Technology, Nov. 15 to 18. The appointment was made in response to invitations sent to the governors of the forty-eight states and to the mayors of sixty cities to name delegates.

OHIO

New Docks at Portsmouth.—Work on modern concrete docks to replace the wooden ones at Portsmouth, installed several years ago by the Wheeling Steel Co. has been started. These docks are used for coal shipments received by barge from West Virginia and Ohio mines. The company has also started the building of a 275-ft. retaining wall to protect the docks.

Cambridge Mines on Union Roll.—Lee Hall, state president of the United Mine Workers, declares that the Cambridge Collieries Co., of Cleveland, is about to start three of its eight mines in the Ohio field on the Jacksonville agreement. These three mines, he said, have been idle for a year, while the others, which have been running much below capacity, will be put at capacity shortly. He enumerates among these five mines, the Blairmont near Adena, where an alleged attempt to operate non-union was made. He says that 28,000 union miners are working in Ohio today.

PENNSYLVANIA

Russelton Mine Takes On 100.—The Russelton coal mine, Russelton, owned by the Superior Fuel Co., which had been closed for more than a year, was reopened last week with 100 workmen employed. The full strength of 300 employees will soon be put to work, officials said. The capacity of the mine when running full blast is 1,500 tons daily.

Ford Mine Again in Action.—Mine No. 2 of the Ford Collieries Co., at Curtissville, which had been closed two years and four months, was to reopen Nov. 3, officials of the company announced last week. The mine will employ about 500 men. Former employees will be given first consideration. With the opening of this mine only one idle operation remains in the Russelton district.

Deficit Shrinks.—The Pennsylvania Coal & Coke Co. and subsidiaries report a September deficit of \$9,762 after ordinary taxes, depreciation and depletion, but before federal taxes, against a deficit of \$18,800 in September, 1925. The deficit for the quarter ended Sept. 30 was \$71,773 after the above charges, as against a deficit of \$108,440 in the third quarter of 1925. The nine months' deficit totaled \$266,912, against a deficit of \$457,533 in the first nine months of 1925.

An extra dividend of 2 per cent, in addition to the regular quarterly payment of 2 per cent, was declared by the Lehigh Coal & Navigation Co. last week.

Three Hillman Mines Reopened.—The Naomi mine of the Hillman Coal & Coke Co., near Belle Vernon, has been reopened on the Jacksonville scale. Two other mines of the same company, the Ellis mine, near Webster, and the Patterson No. 2 mine, at Elizabeth, also have resumed on the union scale.

Coal Company Sells Tract.—The Pittsburgh Coal Co. has sold the Coulson farm, near Monongahela City, to a real estate company, which will make a suburban development. The tract contains 200 acres.

Henderson Mines in Union List.—The Henderson Coal Co. has resumed operations at two of its mines in the Pittsburgh district on the Jacksonville scale. They are Henderson No. 1 mine, at Hendersonville, and Henderson No. 2 mine, at Finleyville.

Building of Breaker Deferred.—The Lehigh Valley Coal Co. has decided not to proceed in the near future with the erection of a new breaker at Blackwood. The land in the vicinity of Blackwood is owned by the Pardee estate and the Lehigh Valley corporation. So far it has not been apportioned and until this has been done it is not thought that anything will be done in reference to the erection of a breaker.

To Urge Labor Legislation.—Anthracite miners have planned an extensive program for presentation to the session of the state Legislature in January. The tri-district board, which has other issues under consideration, may change the present plans to push the following issues: Increased schedules of compensation; lowering of waiting period; increase in appropriations to mothers' pension fund; including asthma as a cause for payment of compensation to miners; permanent disability to be compensated during life; passage of laws regulating use of electricity in gaseous mines; passage of laws providing for attendants at all ventilating fans; pay-

ment of full amount of compensation to parents for son killed, regardless of amount of dependence; passage of old-age pension amendment and adoption of necessary law as provided for by old-age pension commission.

Sonman Slope Working.—The Sonman Slope mine of the Sonman Shaft Coal Co. at Sonman, Cambria County, has resumed operations after an idle period of more than two years. Between 200 and 250 men are employed, working under the Jacksonville agreement. The Sonman concern operates two other mines and by Nov. 15 expects to produce 3,000 tons daily.

Operating Pick-Up Spreads.—A new coal mine for the development of 100 acres of coal is to be opened in the near future at Fort Palmer, near Ligonier, by the Diamond Coal Co. A siding for the new mine has been placed and the tippie is being erected. Between 400 and 500 miners were given employment Oct. 18 when the Barking mine resumed operation. The mine had been idle for 15 months.

Gibson Mine Engages 300 Men.—Unemployment has been further reduced in the Bentleyville district by the re-opening of the Gibson mine of the Hillman Coal & Coke Co. About 300 men are employed.

Allegheny Valley Mines Hum.—Among the many mines reopening in the Allegheny Valley are the Kramer, Eriton and Dagus of the Erie Railroad interests and the Cascade Co.'s Sykesville mine, an auxiliary of the Buffalo & Susquehanna Coal Co. The Sykesville mine had been idle several months, but the Erie mines showed 756 men at work on last pay day. The full capacity, now put on, will be 2,000 men. The Jacksonville scale will be paid.

TENNESSEE

The Wilson-Berger Coal Co. has acquired the Clairfield-Jellico Coal Co.'s holdings and property near Clairfield. The company will operate under the name of Virginia-Jellico Coal Co.

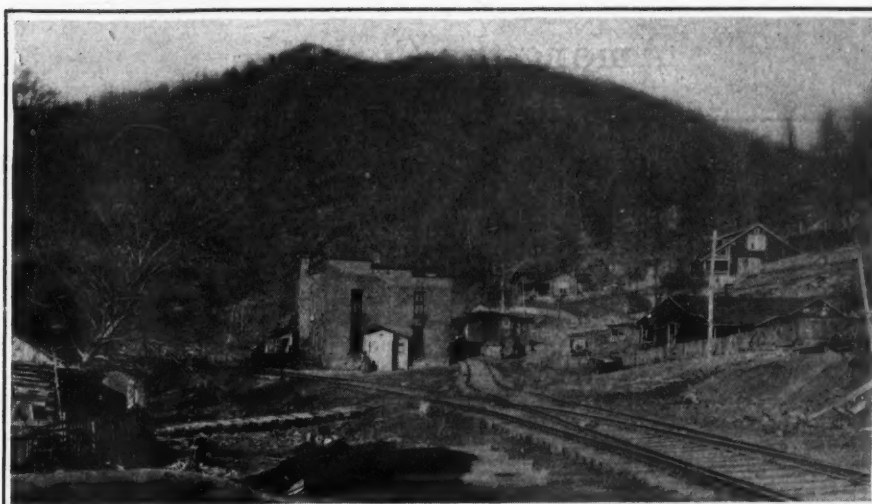
UTAH

Eli F. Taylor, register of the Federal Land Office at Salt Lake City, has issued a warning against mining coal on the public domain before having acquired the legal right to do so. Mr. Taylor says he has reason to believe the law in this regard is being violated, and declares immediate charges will be preferred if the offenders do not cease their operations.

VIRGINIA

Amendment to the charter of the Pocahontas Coal Corporation, of Boissevain, increasing its authorized capital stock from 10,000 to 35,000 shares, has been authorized by the Virginia State Corporation Commission. James Elwood Jones is vice-president and L. B. Crawford is assistant secretary of the corporation.

The Great Valley Coal Co., at McCoy, is erecting four additional buildings at its mines. A handsome new clubhouse, erected by the company for its employees, rapidly is nearing completion.



Commissary and Office at Manring, Tenn.

This is the general office of the Sterling Coal & Coke Co., about nine miles from Middlesboro, Ky.

In addition, work is proceeding on a number of modern homes, which will be rented to employees.

WEST VIRGINIA

Consolidation Headquarters to Move?—Action on the question of the location of permanent headquarters for the operating department of the Consolidation Coal Co., which have been in Fairmont for the last quarter of a century, will be taken at a meeting of the directors to be held in New York City Nov. 1, Col. C. W. Watson, president of the company, announced in Fairmont recently.

The Riley Coal Co. mine at Coffman will resume operations soon on an open-shop basis.

Robert M. Lambie, chief of the State Department of Mines, has been designated by Gov. Howard M. Gore as West Virginia's delegate to the international conference on bituminous coal at the Carnegie Institute of Technology, Pittsburgh, Pa., Nov. 15-18.

Brush Creek Plant in Commission.—Operations have been resumed at the plant of the Blue Ridge Coal Corporation at Brush Creek, Boone County, with about 200 men employed, according to a statement made by L. M. Ramsey, president of the company. The company recently completed a new and modern tippie, which has been placed in commission. J. J. Ross is in charge of operations.

Security Mine Starts Open Shop.—Announcement has been made by E. C. Mobley, general superintendent of the Paisley Coal Corporation, of the resumption of operations at the Security mine of the Elm Grove Mining Co., a Paisley holding, on Oct. 27. This mine when working at capacity employs about 100 men. It has been idle for some time. It is the fourth mine of the company to be reopened in recent months on an open-shop basis.

The Marine Smokeless Coal Co., operating in the Tug River field, on the main line of the Norfolk & Western, has been adjudged a bankrupt. F. H.

Borden, of Bluefield, has been appointed receiver, and W. T. Williams, of Bluefield; J. Harvey Williams, of Welch, and George Wolfe, of Norfolk, Va., have been appointed by the court to appraise the property.

The Elm Valley Coal Co., composed of Wheeling capitalists, which recently received a charter from the state to do business, has purchased the interests of the Caloric Coal Co., consisting of 300 acres of coal land near Elm Grove upon which is located a modern mine. It was announced by President Frank Costanzo that the mine was to start in full last week on an open-shop basis with 160 miners employed.

The Island Creek Coal Co. reports for the quarter ended Sept. 30, 1926, net income of \$623,539 after federal taxes, depreciation and depletion, equivalent, after \$6 preferred dividend requirements, to \$4.61 a share earned on 118,801 shares of common stock. This compares with \$819,693, or \$6.27 a share, in the preceding quarter and \$618,335, or \$4.57 a share, in the third quarter of 1925. Net income for the first nine months of 1926 totaled \$2,041,036, equal to \$15.29 a share on common, against \$1,555,376, or \$11.20 a share on common, in the first nine months of the previous year.

CANADA

Record Coke Output.—Coke output in Canada during September, 166,292 tons, was the highest recorded for any month since the Bureau of Statistics at Ottawa commenced collecting monthly figures in January, 1925. In August the output was 165,662 tons, and in September, 1925, production totaled only 102,882 tons.

Prospectors who staked claims in the prospective coal area south of James Bay have been unable to complete the work required by the Mines Act to insure the title to their claims within the specified time owing to the difficulty of bringing in machinery. The Ontario Government has extended the time, giving claim holders until Dec. 31 to take out a boring license and an additional 3 months to have boring operations under way.

Among the Coal Men

Governor Pinchot has appointed W. J. McGregor, of Eldersville, Pa., as a bituminous mine inspector. He succeeds David Young, who resigned. McGregor will be located in the fourteenth district, comprising parts of Allegheny, Westmoreland, Armstrong, Indiana and Butler counties.

Herbert Wardrop has been appointed safety engineer of the Clearfield Bituminous Coal Corporation with headquarters at Indiana, Pa. He will have full charge of all first-aid, accident-prevention and general safety work in and around the mines of the corporation. The appointment, which was announced in an order signed by F. E. Herriman, president, and A. J. Musser, vice-president and general manager, became effective Oct. 4.

Dr. Alfred W. Gauger has succeeded the late Dean E. J. Babcock as director of extension of mines and mining experiments at the University of North Dakota, Grand Forks. Dean Babcock was widely known for his interest in lignite. Dr. Gauger comes from the laboratories of the Roessler & Hasselacher Chemical Co., Perth Amboy, N. J.

T. Johnson Ward and Henry T. Vaux, of Philadelphia, stockholders and directors of the DeBardeleben Coal Corporation, Birmingham, Ala., visited officials of the company recently and made an inspection of the operations of the corporation which are practically all on full-time schedule at present.

E. E. Jones of Glen White, has been appointed general manager of the Lillybrook Coal Co., with headquarters at Lillybrook, W. Va., effective Oct. 1. Mr. Jones has been mine superintendent for the E. E. White interests for the last eight years, having spent five years at Stotesbury and three at Glen White. Extensive improvements have been made at the No. 4 mine at Sullivan where the Lillybrook company has started a program of beautifying the town. New houses are being constructed and old ones are being painted. At the mine entrance a 100-man unit bath-house is being erected. The Lillybrook group is now the third largest producing group in the Winding Gulf field.

W. B. Parks, who for a number of years was superintendent for the Monticello Coal Co. at Monte Carlo, W. Va., has accepted the post as superintendent of the E. E. White Coal Co. at Stotesbury, vice Thomas Margon, Jr., who has been transferred to the Glen White operation as successor to E. E. Jones.

Major W. W. Inglis, president of the Glen Alden Coal Co., recently announced at the headquarters of the company in Scranton, Pa., the following changes in operating personnel: George O'Hara, of Scranton, promoted from general mine inspector to assistant to the general manager; P. H. Devers, formerly superintendent of the Truesdale colliery, also named assist-

ant to the general manager; David Girvan, heretofore superintendent of the Bliss colliery, appointed superintendent of the Truesdale colliery; Henry Kittle, lately superintendent of the Avondale colliery, made superintendent of the Bliss colliery; Samuel Harrison, assistant superintendent at Loomis, promoted as superintendent at Avondale; Thomas Millington, named assistant superintendent at Loomis.

J. Milton Miller, who has been associated with his brother, J. G. Miller, vice-president of the Raleigh Smokeless Fuel Co., in the Norfolk office for the past six years, is in charge of the Western business of the company with headquarters in the Dixie Terminal Building, Cincinnati. He succeeds E. C. Robertson, who resigned to go with the Pittsburgh Coal Co.

C. J. Neekamp, secretary of the Northeast Kentucky Coal Operators Association, has been named by Governor W. J. Fields of Kentucky as delegate from that state to the conference on bituminous coal at Carnegie Institute of Technology, Pittsburgh, Pa., Nov. 15 to 18.

Obituary

Ernest C. Ramsey, aged 55, a retired coal operator of Ligonier, Pa., died in his home Oct. 27. He had been in ill health for some time. Mr. Ramsey was born in the Ligonier Valley and 25 years ago came to Ligonier. He had been president of the Ligonier Valley Sportsmen's Association from the time of its organization. He was treasurer of the Westmoreland County chapter of the American Red Cross. He is survived by his father and two brothers.

William Earl, superintendent of the Bonita Coal Co., at LeJunior, near Harlan, Ky., died at a hospital in Harlan, on Oct. 22, of injuries suffered the previous day, when his legs were cut off by a mine motor. Mr. Earl lived at Pineville, but had been operating the Bonita plant for several months. He is survived by a widow and several children.

Association Activities

At the annual meeting of the Buffalo Bituminous Coal Association, held on Oct. 26, Fred A. Mohr, Harry F. Coxon and Guernsey Camp were re-elected directors, H. B. Alderman and F. H. Hoag holding over. The officers will be elected in a few days. Three members of the American Wholesale Coal Association were present and gave short addresses. They stated that it was in excellent condition and probably would be needed before the trade was again on a stable basis. Several new members were obtained.

Publications Received

The Cause and Prevention of Embrittlement of Boiler Plate, by Samuel W. Parr and F. G. Straub. Engineering Experiment Station, University of Illinois, Urbana, Ill. Bulletin No. 155. Pp. 62; 6x9 in.; illustrated. Describes a number of typical boiler failures, together with the methods employed in studying the results produced under varying conditions.

A.S.T.M. Standards Adopted in 1926. American Society for Testing Materials, Philadelphia, Pa. Pp. 102; 6x9 in.; illustrated. Price, \$1.50. Comprises the second supplement to the 1924 Book of A.S.T.M. standards and contains 16 standards adopted by letter ballot of the society on Sept. 1, 1926.

Coal in 1923, by F. G. Tryon and L. Mann. U. S. Geological Survey, Washington, D. C. Pp. 746; 6x9 in.; illustrated.

Quantity of Wood Treated and Preservatives Used in the United States in 1925, by R. K. Helphenstine, Jr. U. S. Department of Agriculture, Forest Service, Washington, D. C.

Pennsylvania Geological Survey, Harrisburg, Pa., has issued the following topographic and geologic atlases of Pennsylvania, with reports thereon: No. 65: Punxsutawney Quadrangle, by George H. Ashley; 145 pp. No. 37: Greensburg Quadrangle, by Meredith Johnson; 162 pp. No. 178: New Holland Quadrangle, by Anna I. Jonas and George W. Stose; 40 p. No. 206: Allentown Quadrangle, by Benjamin Leroy Miller; 195 pp.

Rocks and Minerals is the title of a little publication which recently made its appearance. It is published quarterly by Peter Zodac, of Peekskill, N. Y.

The Use of Power in Colliery Working, by John Kirsopp. H. F. & G. Witherby, High Holborn, London, W. C., England. Price, 40s. net. Pp. 632; 6x11 in.; illustrated. A treatise on mining costs and machinery designs and management.

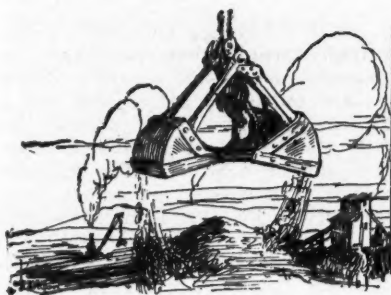
Commercial and Industrial Organizations of the United States. U. S. Department of Commerce, Washington, D. C. Domestic Commerce Series No. 5. Pp. 191; 6x9 in.

Firedamp Explosions: The Projection of Flame, by M. J. Burgess. Safety in Mines Research Board, Paper No. 27. Pp. 14; 6x9 in.; illustrated. Price, 6d. H. M. Stationery Office, Adastral House, Kingsway, London W.C.2, England.

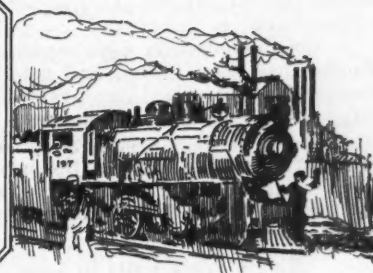
Cement in 1924, by E. F. Burchard and B. W. Bagley, Bureau of Mines, Washington, D. C. (Mineral Resources of the U. S., 1924—Part II, pp. 347-383.)

Transvaal Chamber of Mines. Thirty-sixth annual report, 1925. Pp. 180; 7x9½ in.

Giant Power. Proceedings before the Committee on Corporations of the Senate and the Manufacturers Committee of the House of Representatives, Harrisburg, Pa., being a joint hearing on Senate Giant Power Bills Nos. 32, 33, 34, 35, 36 and 37, extraordinary session of 1926. Pp. 103; 6x9 in.



Production And the Market



Runaway Trend in Soft Coal Gains Momentum; Spot Prices Soar with Panicky Buying

The runaway market in bituminous coal gained additional momentum last week and extended its zone of influence as far west as the Mississippi River and as far south as the Gulf of Mexico. Panicky buying in tidewater markets, particularly in New England, and greater pressure for prompt deliveries in Central Freight Association territory carried spot quotations to still higher levels. Dwindling car supply, congestion between the mines and the seaboard, and shifting labor augmented the tenseness of the situation.

Quotations on Navy Standard coal at Hampton Roads touched \$10 per gross ton, f.o.b. piers—the highest level reached since the feverish days of 1920. The high-volatile districts of West Virginia and Kentucky also registered further advances. Pennsylvania quotations were on the upgrade. The Birmingham district, heretofore unswayed by developments in the North, was on a firmer basis. Ohio prices advanced. In Illinois and Indiana, operators, encouraged by the course of the Eastern markets, announced advances on some coals—forerunners, probably, of a general increase.

Index Jumps 36 Points

Coal Age Index of spot bituminous prices on Nov. 1 stood at 285, and the corresponding weighted average price was \$3.45. Compared with Oct. 25 this was an increase of 36 points and 43c. In two weeks the index number has shown an advance of 83 points and the weighted average price \$1. The present levels are the highest recorded since Feb. 26, 1923, when the index number was 288 and the weighted average price

was \$3.49. At that time, it will be recalled, the country was recovering from the effects of the prolonged strike of 1922.

Barring an immediate collapse of buying for overseas shipments, further increases in prices are in prospect. Whether transportation or labor will contribute more to such a development is one of the big questions which the next few weeks will settle. The permissive-embargo system in effect at the tidewater piers is employed in an effort to minimize congestion, but it does not increase the buyer's feeling of security. New England interests already have applied to Washington for priority relief. Complaint of car shortage is becoming more general.

Labor Situation Complicated

The labor situation, too, is complicated. Competition between union and non-union fields for the surplus labor that trekked from the Northern mining regions when production was low is active. This competition has caused Ohio to abandon all thought of wage reductions and has forced advances in western and central Pennsylvania and at some operations in the Fairmont district. Under such circumstances it is extremely unlikely that the Southern fields will be able to hold to the 1917 scale and still maintain production; in fact Kanawha has already advanced wages.

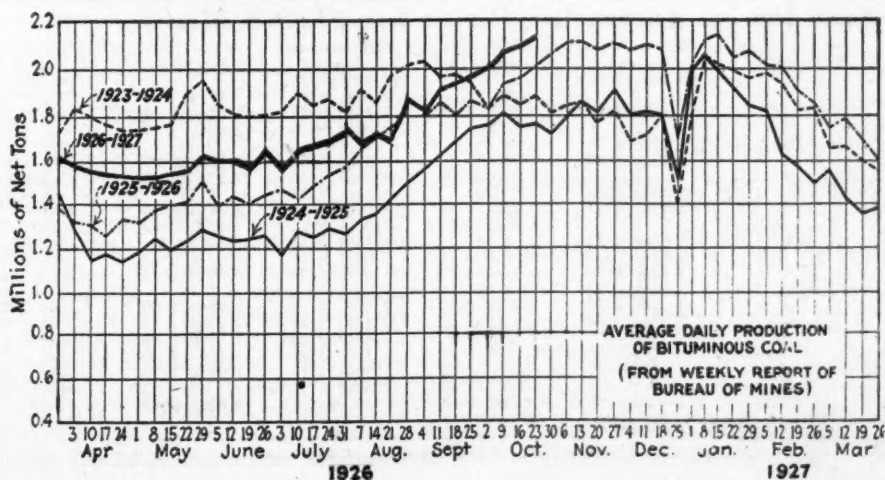
Weekly output still exceeds the 12,000,000-ton mark. During the week ended Oct. 23 total bituminous production was estimated by the U. S. Bureau of Mines at 12,612,000 net tons. Compared with the preceding week this was

an increase of 226,000 tons. Preliminary figures covering loadings on Oct. 25 and 26 indicate that last week's output was on a comparable basis. The lake trade now plays a smaller rôle in production figures. Dumpings at the lower ports during the week ended Oct. 31 were 679,488 tons of cargo and 46,200 tons of vessel fuel. This brought the season's total to date to 25,786,936 tons. For the corresponding period last year the total was 24,018,474 tons.

Anthracite Demand Strong

The anthracite division of the industry continues on an active basis. Production for the week ended Oct. 23 was estimated by the U. S. Bureau of Mines at 2,097,000 net tons, as compared with 2,093,000 tons the preceding week. Unhampered by labor or transportation difficulties, the anthracite producers have been in a position to concentrate their efforts upon distribution. When allowance is made for the production losses due to the strike in the early part of the year, cumulative totals to date show how well the producers have employed their time in regaining their position in Eastern markets.

Domestic demand at the present time is so strong in New York territory that independent quotations on egg, stove and nut have been advanced. Philadelphia quotations are stationary. Egg, however, moves less readily than nut or stove and nut is entering a period of stronger demand. Pea is much less active than it was at the beginning of the season. Conditions in the steam trade still are somewhat uneven, but every week that bituminous prices in-



Estimates of Production

(Net Tons)		
BITUMINOUS		
	1925	1926
Oct. 9.....	11,681,000	12,363,000
Oct. 16 (a).....	11,770,000	12,386,000
Oct. 23 (b).....	12,088,000	12,612,000
Daily average.....	2,015,000	2,102,000
Cal. yr. to date.....	404,767,000	447,312,000
Daily av. to date (c).....	1,615,000	1,784,000
ANTHRACITE		
Oct. 9.....	13,000	2,069,000
Oct. 16.....	17,000	2,093,000
Oct. 23 (b).....	13,000	2,097,000
Cal. yr. to date (c).....	61,312,000	68,256,000
BEEHIVE COKE		
Oct. 16 (a).....	226,000	201,000
Oct. 23 (b).....	224,000	200,000
Cal. yr. to date (c).....	7,890,000	9,650,000

(a) Revised since last report. (b) Subject to revision. (c) Adjusted to equalize number of days in the two years.

crease the outlook for the smaller sizes of hard coal is improved.

In the Connellsville coke region, production has been falling and prices increasing. The most significant development in that section, however, has been the general adoption of the Frick scale of Aug. 23, 1922, as the basis of wages. The coke business in other sections of the country is moving at a satisfactory rate.

Middle West Falls in Line

The Middle West is making valiant efforts to keep in step—even if far in the rear—with the advancing price movement in the Eastern markets. Franklin County operators increased lump and 6x3 egg to \$3.50 on Monday of this week and Fourth Vein Indiana lump prices are up 15 to 30c. Screenings, too, are somewhat stronger in some of the Illinois and Indiana districts. If these advances can be maintained, other producers will quickly follow the trail.

Complaint is made of a dwindling car supply. This, coupled with low reserve stocks in the hands of both industrial consumers and retail distributors, makes predictions of sharper increases within a short time common. In the opinion of many observers a touch of real wintry weather would send spot quotations on Illinois and Indiana skyrocketing.

The prices asked on open shipments of West Virginia and eastern Kentucky high-volatile coals in the Chicago market are meeting with little response. Some of the business which would normally go to the Eastern mines has shifted to the Middle Western producers. As a result of this, as well as heavier buying by regular customers, running time in the Middle West is improving.

"No Bills" Still Plague Mines

Despite the gains made, however, most of the mines in southern Illinois still are carrying "no-bill" domestic

sizes, particularly egg and nut. Working time, except when cut short by car supply, is fairly regular. Strip mines are unusually active and find a ready market for their product at slightly better prices. Railroad buying has not been heavy. The greatest complaint of car shortage comes from mines served by the Illinois Central R.R.

Operations in the Duquoin and Jackson County districts are averaging four to five days a week. A marked improvement is noticeable in the Mt. Olive field, with most mines working five days. Domestic buying has increased and railroad orders help the steam situation. Lump prices have advanced 10 to 15c. in the Standard district, but screenings for St. Louis delivery have dropped to 80@90c., although somewhat higher prices ruled in the Chicago markets.

In the St. Louis local market the bulk of the current retail business is for immediate consumption and favors the

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

Low-Volatile, Eastern					Midwest				
	Market Quoted	Nov. 2 1925	Oct. 18 1926	Oct. 25 1926	Nov. 1 1926†		Market Quoted	Nov. 2 1925	Oct. 18 1926
Smokeless lump.....	Columbus...	\$4.85	\$5.50	\$5.75	\$5.50@6.00	Franklin, Ill. lump.....	Chicago.....	\$3.25	\$3.25
Smokeless mine run.....	Columbus...	2.35	2.65	3.85	4.00@4.50	Franklin, Ill. mine run.....	Chicago.....	2.35	2.40
Smokeless screenings.....	Columbus...	2.05	1.40	2.60	2.50@3.00	Franklin, Ill. screenings.....	Chicago.....	1.60	1.50
Smokeless lump.....	Chicago.....	5.75	5.50	5.50	5.25@5.75	Central, Ill. lump.....	Chicago.....	2.85	2.85
Smokeless mine run.....	Chicago.....	2.25	3.10	3.35	3.50@4.00	Central, Ill. mine run.....	Chicago.....	2.20	2.20
Smokeless lump.....	Cincinnati.....	6.25	5.50	5.50	5.00@6.25	Central, Ill. screenings.....	Chicago.....	1.55	1.45
Smokeless mine run.....	Cincinnati.....	2.35	2.95	3.25	3.25@3.75	Ind. 4th Vein lump.....	Chicago.....	3.10	3.05
Smokeless screenings.....	Cincinnati.....	1.95	2.50	2.60	2.75@3.25	Ind. 4th Vein mine run.....	Chicago.....	2.35	2.25
*Smokeless mine run.....	Boston.....	4.95	6.50	7.35	9.50@10.00	Ind. 4th Vein screenings.....	Chicago.....	1.60	1.50
Clearfield mine run.....	Boston.....	2.05	2.55	3.85	3.50@4.25	Ind. 5th Vein lump.....	Chicago.....	2.35	2.65
Cambria mine run.....	Boston.....	2.35	2.65	4.10	4.00@5.00	Ind. 5th Vein mine run.....	Chicago.....	1.95	2.00
Somerset mine run.....	Boston.....	2.15	2.20	4.10	3.75@4.50	Ind. 5th Vein screenings.....	Chicago.....	1.40	1.35
Pool 1 (Navy Standard).....	New York.....	2.85	2.85	3.50	4.50@4.75	Mt. Olive lump.....	St. Louis.....	2.50	2.60
Pool 1 (Navy Standard).....	Philadelphia.....	2.65	2.85	3.35	4.15@4.40	Mt. Olive mine run.....	St. Louis.....	2.00	2.25
Pool 1 (Navy Standard).....	Baltimore.....	2.15	2.55	3.00	4.00@4.25	Mt. Olive screenings.....	St. Louis.....	1.75	1.25
Pool 9 (Super. Low Vol.).....	New York.....	2.20	2.50	3.30	4.25@4.50	Standard lump.....	St. Louis.....	2.25	2.15
Pool 9 (Super. Low Vol.).....	Philadelphia.....	1.95	2.60	3.10	4.10@4.35	Standard mine run.....	St. Louis.....	1.80	1.80
Pool 9 (Super. Low Vol.).....	Baltimore.....	1.95	2.50	2.75	3.75@4.00	Standard screenings.....	St. Louis.....	1.15	1.05
Pool 10 (H.Gr. Low Vol.).....	New York.....	1.95	2.35	3.15	3.75@4.25	West Ky. block.....	Louisville.....	2.05	2.40
Pool 10 (H.Gr. Low Vol.).....	Philadelphia.....	1.85	2.35	2.85	4.00@4.25	West Ky. mine run.....	Louisville.....	1.35	1.30
Pool 10 (H.Gr. Low Vol.).....	Baltimore.....	1.80	2.30	2.60	3.50@3.65	West Ky. screenings.....	Louisville.....	.90	.85
Pool 11 (Low Vol.).....	New York.....	1.80	2.15	2.60	3.65@4.00	West Ky. block.....	Chicago.....	2.05	2.10
Pool 11 (Low Vol.).....	Philadelphia.....	1.70	1.95	2.40	3.35@3.50	West Ky. mine run.....	Chicago.....	1.25	1.15
Pool 11 (Low Vol.).....	Baltimore.....	1.55	2.20	2.40	3.00@3.35				

High-Volatile, Eastern					South and Southwest				
	Market Quoted	Nov. 2 1925	Oct. 18 1926	Oct. 25 1926		Market Quoted	Nov. 2 1925	Oct. 18 1926	Oct. 25 1926
Pool 54-64 (Gas and St.).....	New York.....	1.55	2.60	2.60	3.75@4.00	Big Seam lump.....	Birmingham.....	2.25	2.35
Pool 54-64 (Gas and St.).....	Philadelphia.....	1.60	2.10	2.90	3.45@3.60	Big Seam mine run.....	Birmingham.....	1.75	1.85
Pool 54-64 (Gas and St.).....	Baltimore.....	1.55	2.10	2.50	3.35@3.65	Big Seam (washed).....	Birmingham.....	1.85	2.05
Pittsburgh ac'd gas.....	Pittsburgh.....	2.85	3.35	4.25	4.50@5.00	S. E. Ky. block.....	Chicago.....	3.00	3.75
Pittsburgh gas mine run.....	Pittsburgh.....	2.35	2.85	3.35	4.00@4.50	S. E. Ky. mine run.....	Chicago.....	1.95	2.00
Pittsburgh mine run (St.).....	Pittsburgh.....	2.20	2.20	2.65	3.75@4.25	S. E. Ky. block.....	Louisville.....	3.10	3.50
Pittsburgh slack (Gas).....	Pittsburgh.....	1.30	1.75	2.10	2.75@3.50	S. E. Ky. mine run.....	Louisville.....	1.50	2.00
Kanawha lump.....	Columbus.....	2.60	3.25	3.75	4.00@4.50	S. E. Ky. screenings.....	Louisville.....	1.20	1.30
Kanawha mine run.....	Columbus.....	1.70	2.25	3.10	3.50@4.00	S. E. Ky. block.....	Cincinnati.....	3.25	3.35
Kanawha screenings.....	Columbus.....	1.30	1.15	1.80	2.00@2.25	S. E. Ky. mine run.....	Cincinnati.....	1.60	1.85
W. Va. lump.....	Cincinnati.....	2.75	3.35	3.60	4.00@5.00	S. E. Ky. screenings.....	Cincinnati.....	1.25	1.35
W. Va. gas mine run.....	Cincinnati.....	1.60	1.95	3.00	3.00@5.00	Kansas lump.....	Kansas City.....	4.85	4.60
W. Va. steam mine run.....	Cincinnati.....	1.55	1.85	2.95	3.25@3.85	Kansas mine run.....	Kansas City.....	3.10	3.00
W. Va. screenings.....	Cincinnati.....	1.25	1.35	2.25	2.00@2.50	Kansas screenings.....	Kansas City.....	2.30	2.35
Hooking lump.....	Columbus.....	2.70	2.85	3.25	3.75@4.25				
Hooking mine run.....	Columbus.....	1.65	1.80	1.85	3.00@3.50				
Hooking screenings.....	Columbus.....	1.30	1.20	1.55	2.00@2.15				
Pitts. No. 8 lump.....	Cleveland.....	2.55	2.75	3.60	3.50@4.00				
Pitts. No. 8 mine run.....	Cleveland.....	1.95	2.05	2.60	2.90@3.00				
Pitts. No. 8 screenings.....	Cleveland.....	1.45	1.50	2.25	2.50@2.75				

* Gross tons, f.o.b. vessel, Hampton Roads

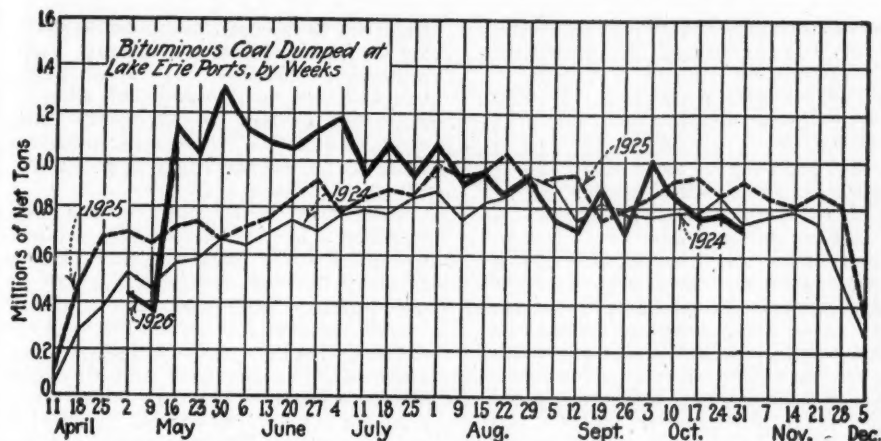
† Advances over previous week shown in heavy type, declines in *italics*

Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

		Nov. 2, 1925		Oct. 25, 1926		Nov. 1, 1926†	
	Market Quoted	Independent	Company	Independent	Company	Independent	Company
Broken.....	New York.....	\$2.34	\$8.20@8.95	\$9.25	\$8.50@9.25	\$8.50	\$9.25
Broken.....	Philadelphia.....	2.39	8.65@8.90	8.50@9.15	8.50@9.15	8.50	9.15
Egg.....	New York.....	2.34	8.95@9.25	8.75@9.25	9.00@9.50	8.75	9.25
Egg.....	Philadelphia.....	2.39	9.00@9.50	9.00@9.15	9.00@9.15	9.00	9.15
Egg.....	Chicago.....	5.06	8.03@8.28	8.14	8.13	8.14	8.13
Stove.....	New York.....	2.34	9.15@9.40	9.50@10.00	9.25@9.50	9.75@10.25	9.25@9.50
Stove.....	Philadelphia.....	2.39	8.75@10.20	9.75@10.20	9.35@9.50	9.75@10.20	9.35@9.50
Stove.....	Chicago.....	5.06	8.48@8.80	8.70	8.33@8.58	8.70	8.33@8.58
Chestnut.....	New York.....	2.34	8.65@8.95	9.25@9.50	8.75@9.15	9.50@10.00	8.75@9.15
Chestnut.....	Philadelphia.....	2.39	9.25@10.00	9.25@10.00	9.00@9.15	9.25@10.00	9.00@9.15
Chestnut.....	Chicago.....	5.06	8.50@8.75	8.39	8.33@8.53	8.39	8.33@8.53
Pea.....	New York.....	2.22	5.00@6.25	6.00@6.75	6.00@6.50	6.00@6.50	6.00@6.50
Pea.....	Philadelphia.....	2.14	5.00@6.25	6.30@6.75	6.00@6.50	6.30@6.75	6.00@6.50
Pea.....	Chicago.....	4.79	5.50@6.00	6.03	6.10	6.03	6.10
Buckwheat No. 1.....	New York.....	2.22	2.50@2.75	2.25@2.50	2.50@3.50	2.35@3.00	2.50@3.50
Buckwheat No. 1.....	Philadelphia.....	2.14	2.50@3.00	2.25@2.50	2.50@3.00	2.25@2.50	2.50@3.00
Rice.....	New York.....	2.22	2.25	1.60@1.95	2.00@2.25	1.50@1.90	2.00@2.25
Rice.....	Philadelphia.....	2.14	2.25	1.85@2.00	1.75@2.25	1.85@2.00	1.75@2.25
Barley.....	New York.....	2.22	2.25	1.25@1.50	1.50@1.75	1.25@1.50	1.50@1.75
Barley.....	Philadelphia.....	2.14	1.50	1.65@1.75	1.50@1.75	1.65@1.75	1.50@1.75
Birdeye.....	New York.....	2.22	+	1.25@1.60	2.00	1.35@1.60	2.00

* Net tons, f.o.b. mines. † Advances over previous week shown in heavy type; declines in *italics*.

‡ Quotations withdrawn because of strike which started Sept. 1, 1925.



medium and lower priced coals. Country demand for the higher grades is slowing down. Country steam demand is picking up and a good tonnage of the smaller sizes is moving to the Missouri River cities. Local St. Louis wagon steam trade also has increased, but carload business shows no great change.

Kentucky Prices Skyrocket

Colloquially speaking, the Louisville market "went crazy" last week. Eastern Kentucky quotations jumped \$1 per ton and there was little free coal offered at any price. Western Kentucky operators were more modest in their price demands, but little less unwilling to promise prompt shipments. All classes of consumers were bidding for tonnage, but lake and tidewater buying set the pace for all other sections of the market.

Eastern Kentucky block was quoted at \$4.50@\$5.15; lump and egg, around \$4; mine-run, in some cases as high as \$4.50 and in others, under \$4; slack, \$2.25@\$2.75. Western Kentucky block was held at \$2.25@\$2.50 last week, but prices were advanced 25c. on Nov. 1 and further increases are threatened.

The differential in prices between the two fields is forcing more business to the mines in the western part of the state.

There has been no break in the steady demand at the Head of the Lakes. Dock prices on bituminous coals have been marked up 25 to 50c. The new list quotes Kentucky screened lump at \$6.25 @\$7.25; stove, \$6@\$6.75; dock-run, \$5.50@\$5.75; screenings, \$4.25; Pocahontas and New River lump, egg and stove, \$8.25@\$8.50; mine-run, \$5.25@\$5.50; screenings, \$4.25; Youghiogheny screened lump, \$5.50@\$5.75; Youghiogheny, Hocking and splint stove, \$5.25; screenings \$3.80. Youghiogheny dock-run is \$5. Hocking and splint lump are \$5.50, and dock-run, \$4.75.

Dock Anthracite Stronger

Anthracite quotations are firm and demand is growing. Dock operators are confident that the Northwest will readily absorb 1,100,000 tons of hard coal if that quantity can be moved up before the close of navigation. Many householders who had planned to use low-volatile coals will be compelled to switch back to anthracite. The more canny consumers are learning the virtues of No. 1 buckwheat, which is now \$7, an advance of 50c.

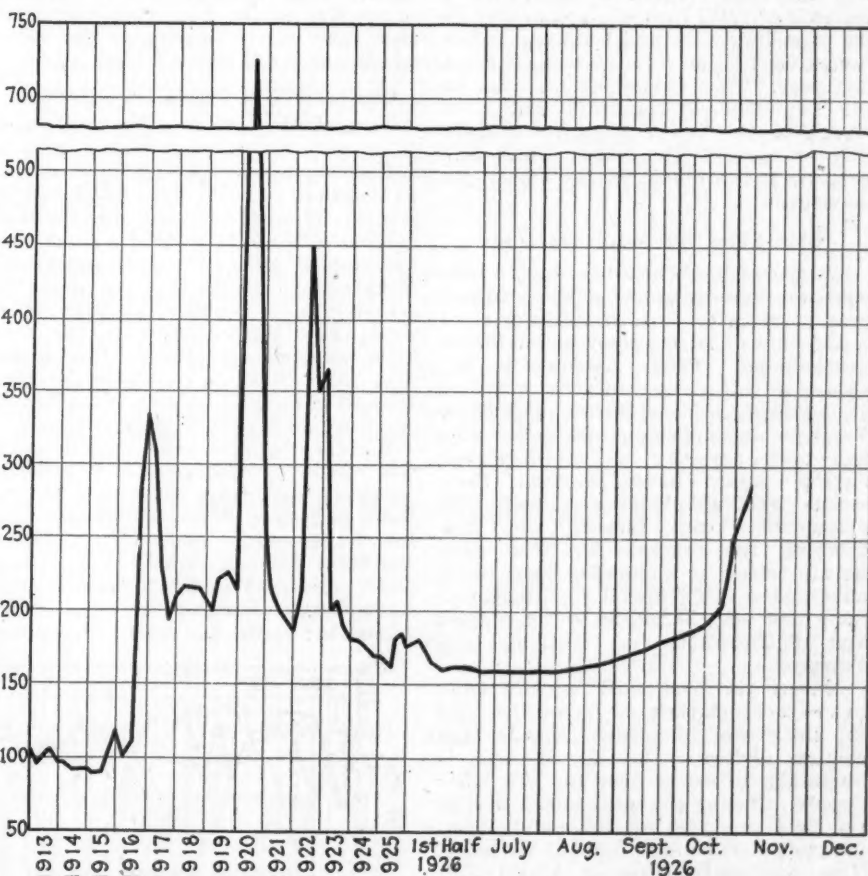
Lake Michigan docks are beginning

east of the Mississippi River. Steam buying is fair but hardly extraordinary and domestic demand is a creature of the weather. No month-end changes were reported for Kansas, Arkansas, Oklahoma, Colorado, Utah or Wyoming. Colorado mines are running 60 to 65 per cent and buying for retail storage is light. Utah mines are averaging half time. The weather has been mild in both states.

Buyers' Army Invades Cincinnati

A small-sized buyers' army has invaded the Cincinnati market and deployed its forces into the mining fields of southwestern West Virginia and southeastern Kentucky. Lake buyers are bidding against tidewater agents for car numbers and the latter are trying to adjust their ordering to the permissive-embargo system in force at the loading piers. For the most part, however, Western interests hold aloof from the scramble and seek to capture tonnage only when the embargoes force movement in their direction.

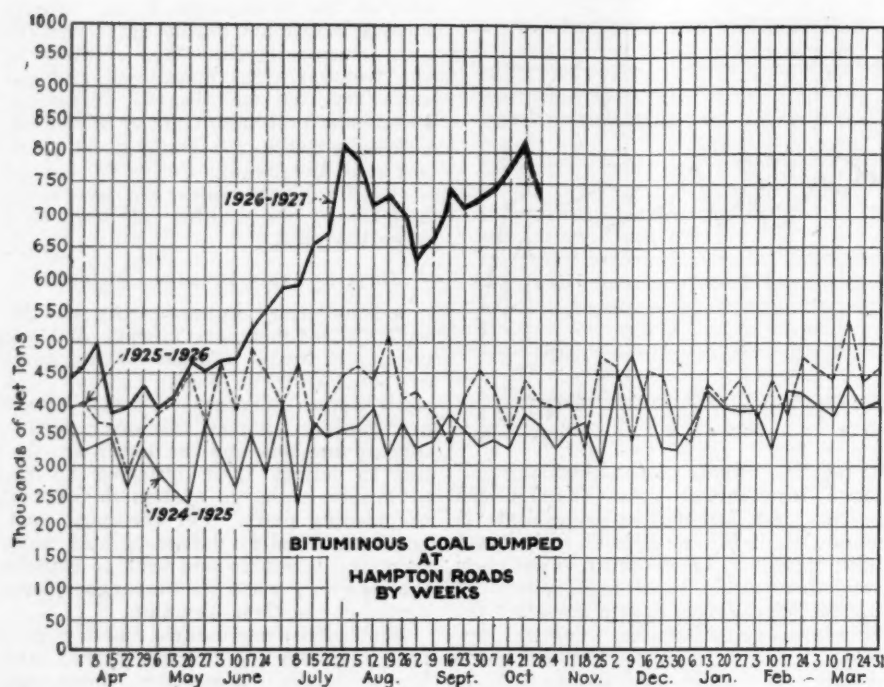
Spot prices are erratic, but the general tendency is toward higher and higher levels. Some 2-in. lump and mine-run have brought \$5 for the lakes. November contract prices on smokeless lump and egg are \$5@\$5.50 and spot orders are booked at \$6@\$6.25. High-volatile mine-run westbound brings \$3 @\$3.50 and up to \$5 when moving east-



Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines

	1926	1925	1924
Nov. 1	285	249	202
Oct. 25	285	249	202
Oct. 18	285	249	202
Oct. 11	285	249	202
Nov. 2	285	249	202
Nov. 3	285	249	202
Weighted average price	\$3.45	\$3.02	\$2.45

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke: 1913-1918," published by the Geological Survey and the War Industries Board.



ward or to the lakes. Spot Kentucky block is held at \$4.25@4.50, but there are few loose car numbers.

The number of coal loads interchanged through the Cincinnati gateway last week dropped to 13,173 cars, a decrease of 1,057 cars when compared to the preceding week and 1,944 cars when compared to the corresponding period last year. The heaviest decline was on the Louisville & Nashville R.R. Included in the interchange were 2,457 cars en route to the lakes. There has been no improvement in the empty-car movement.

Ohio Cries for More Tonnage

Southern Ohio, which not many weeks past was limping along at 18 to 20 per cent of capacity, is now working close to the limit of labor supply and deferred development. Prices continue to advance, with Hocking lump last week at \$3.75@4.25, and mine-run, \$3@3.50. Retailers and industrial consumers who had been pursuing a hand-to-mouth buying policy have reversed their tactics and are bidding actively for shipments. Lake factors also are combing the market for free coal. Retail prices at Columbus have been advanced to \$10@10.50 for smokeless lump and egg, \$8.25@8.50 for splints and \$7.25@7.50 for Hocking and Pomeroy.

During the past week eastern Ohio prices were marked up 50 to 75c. As in the case of other Appalachian Region districts, the No. 8 field is beginning to worry over car and labor supply. During the week ended Oct. 23 the field produced approximately 344,000 tons, or 50 per cent of capacity. This was an increase of 47,000 tons over the total for the preceding week and 31,000 tons over the corresponding period last year. Further increases in production and in prices are forecast.

More feverish spot buying carried western Pennsylvania and northern West Virginia prices to \$4@4.50 on steam mine-run, \$4.25@4.50 on gas mine-run and \$4.50@5 on three-quarter lump last midweek. Toward

the close of the period, however, there was less distress buying and quotations receded to \$4.50@4.75 on screened gas, \$4@4.25 on gas mine-run, \$3.75@4 on steam mine-run and \$2.75@3 on gas slack. What makes the showing more impressive is the fact that there has been little export buying in the Pittsburgh district to force up quotations.

Central Pennsylvania Still Gaining

Central Pennsylvania prices jumped 45 to 60c. last week. Pool 1 went to \$3.75@4; pool 71, \$3.60@3.75; pool 9, \$3.25@3.50; pool 10, \$3.05@3.25; pool 11, \$2.75@2.85, and pool 18, \$2.50@2.60. "No bills," which a short time ago totaled 2,000 cars, have practically disappeared. Production is still increasing and a number of mines which were closed down early in the year have resumed operations. During the first three weeks of October loadings showed a gain of 9,646 cars over the corresponding period in September.

Buffalo doggedly remains outside of the circle of excitement. Consumers purchase only when compelled by the pinch of necessity, hoping steadily that the boom period will soon collapse. Fairmont lump has advanced to \$4.25@4.50; mine-run is \$3.25@3.50; slack, \$2.50@2.75; Youghiogheny gas lump, \$5@5.50; slack, \$2.50@3; Pittsburgh

and No. 8 steam lump, \$4.50@4.75; slack, \$2.50@2.75; Allegheny Valley mine-run, \$3.50@4. Low-volatile lump ranges from a minimum of \$4.50 on Somerset, Indiana and Cambria County coals to \$6.50 on Pocahontas; mine-run, from \$3 on Pennsylvania to \$4 on West Virginia.

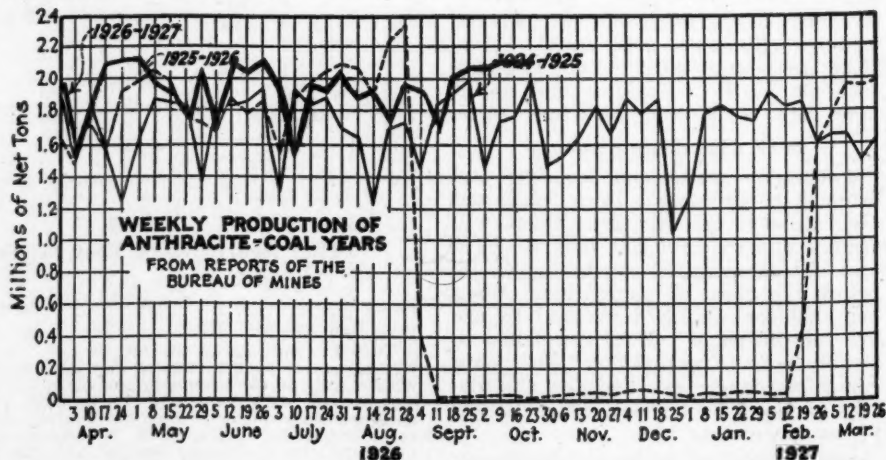
Coastwise movement to the New England steam trade is badly jammed. Quotations are high, but the tonnage actually moving on them is small because it has become extremely difficult to pick up free lots at the piers. From \$9.50 up has been paid for limited quantities of Navy Standard f.o.b. Hampton Roads. There is an acute shortage of spot tonnage of pool 1 coal for loading at Boston and Providence. Late last week it was reported that \$10.50 had been demanded on cars.

Pennsylvania to the Rescue!

New England consumers caught napping by the recent developments are turning to central Pennsylvania for relief. An active demand now features the market in all-rail coals, which now command \$3.50@5, depending upon the grade. So far there has been no serious interference with movement from the Northern mines and little or no hint that supply might fall short of requirements.

The bituminous trade at New York is spotty, with week-end prices showing an increase of \$1 over quotations for the preceding seven days. A little uneasiness was caused by rumors of an immediate settlement of the British strike. At the close of the week Pennsylvania pool 1 was offered at \$3.90@4.25. Factors naming the lower price were influenced by embargoes at Philadelphia and Baltimore; these, they believed, would divert more tonnage to the New York piers. Coke is more active. One of the oddities of the week was the movement of coal to Edgewater pier for export.

Skyrocketing prices featured the developments in the Philadelphia bituminous market last week. Smaller consumers, who had not been keeping in touch with the changing situation, were particularly hard hit by the sharp increases in prices and the shortness of supply. Railroad fuel agents are seeking additional tonnage—in some cases because labor is deserting operations having low-price railroad contracts. Voluntary increases of 25c. have been made on some contracts. Car supply is less free, particularly on the B. & O.



Car Loadings and Supply

	Cars Loaded—	
	All Cars	Coal Cars
Week ended Oct. 16, 1926.....	1,210,163	223,221
Week ended Oct. 9, 1926.....	1,184,862	222,799
Week ended Oct. 17, 1925.....	1,106,009	186,446
Week ended Oct. 10, 1925.....	1,106,099	184,331

	Surplus Cars—		Car Shortages—	
	All Cars	Coal Cars	All Cars	Coal Cars
Oct. 15, 1926..	86,932	16,453	.....	.....
Oct. 8, 1926..	100,069	20,194	.....	.....
Oct. 14, 1925..	130,797	52,942	.....	.....

Export Demand Still Strong

Export demand continues active at Philadelphia, while Baltimore loadings for foreign account promise to establish new records for the latter port. There is a possibility that October totals at the Baltimore piers will approximate 1,000,000 tons. Prices have been fluctuating within 50 to 75c. ranges. Inland and local buyers now bid against export factors for spot tonnage. Offers of free coal have diminished and transportation service is less fluid.

Prices on coal for export at Hampton Roads last week reached \$9.50@\$10, f.o.b. piers—the highest levels touched since the panicky days of 1920. Upward of 100 ships either were in port or en route to Hampton Roads for cargoes and thousands of loads are strung out between the mines and the piers. Movement is controlled by the permissive-embargo system. Buyers are scouring the mining fields offering \$6@\$6.50 net, f.o.b. mines, for prompt shipment.

Birmingham district demand broadened considerably in the closing days of October. The increased buying not only quickened the movement of the higher grade coals but also brightened the outlook in medium and lower quality offerings in both steam and domestic fuels. Standard quality Black Creek is temporarily oversold. There is no great surplus of Cahaba available. Congestion further north is sending some export and foreign bunker business to Pensacola, with inquiries for loading at

Mobile and New Orleans. With the exception of an advance of 25c. in Cahaba and Black Creek washed coal, however, spot prices were unchanged.

Steady Demand for Anthracite

The New York anthracite trade continues active. Pea is the most sluggish of the larger sizes. Egg also lags behind stove and chestnut. As high as \$10.25 was asked on independent stove and advances also were registered in egg and nut. The steady run of company coal, however, holds back large-scale premium buying. The runaway bituminous market is having a favorable effect upon steam anthracite, pushing the better grades of independent buckwheat to \$3. Rice and barley are slow.

Most shippers to the Philadelphia market have been hard put to keep up with their obligations on stove and nut and many will have a carry-over of orders into this month. Some companies are beginning to pick up nut out of storage. Egg, however, is draggy with both company and independent producers. Pea is long. Steam sizes are in fair demand, with No. 1 buckwheat the least active and barley the strongest size.

Cooler weather livened up the anthracite trade at Baltimore. Householders placed orders much more freely, but retail stocks and the run of coal from the mines were equal to all demands. Buffalo reports a normal demand for hard coal. Lake shipments during the week ended Oct. 28 totaled 51,200 net tons, of which 16,000 tons were cleared for Duluth and Superior, 12,700 tons for Chicago, 10,300 tons for Sheboygan, 7,200 tons for Milwaukee and 5,000 tons for Marquette.

Coke Hits Upgrade

Higher prices for raw coal and odd-lot buying by outside interests forced Connellsville coke quotations to \$5@\$5.50 on furnace and \$5.50@\$6 on foundry coke by the end of last week. Wage increases, effective Nov. 1, have put both Steel Corporation and independent ovens on the Frick scale of

Aug. 23, 1922. As a result, fourth-quarter contract prices, averaging \$3@\$3.25, will be increased about 75c.

Coke production in the Connellsville and Lower Connellsville region decreased 6,750 tons during the week ended Oct. 23, according to the Connellsville *Courier*. Furnace-oven output was 67,500 tons, a decline of 3,100 tons when compared with production for the preceding week. Merchant-oven output was 76,050 tons, a decline of 3,470 tons.

Traffic News

Want Common Rate Basis

Complaint has been filed with the Interstate Commerce Commission in Docket 18641, which has been given the title of Sub. 2, by the Virginia Coal Operators' Association vs. the Chesapeake & Ohio Ry. et al. Complainant operates mines in the Clinch Valley 1 and 2 districts. It is claimed that for many years rates have been collected from those districts to all destinations on the same basis as from the Pocahontas and Tug River districts of the Norfolk & Western and Virginian mines, as well as the New River district of the C. & O. Furthermore, it is alleged that notwithstanding the fact that this parity of rates is maintained to Potomac Yards and Washington, D. C., when for Southern Ry. or Pennsylvania delivery in that city, Clinch Valley mines are required to pay a higher rate when the delivery is on the Baltimore & Ohio R.R. for Washington and suburban points. Complainant asks that its complaint be heard in connection with the original docket. The original case is set for hearing at Washington on Dec. 9.

The Norfolk & Western Ry. has applied to the Interstate Commerce Commission to place on a parity the rates on coal eastward from the Kenova and Thacker field. The Thacker field now has a rate 10c. lower than that enjoyed by the Kenova field although the westward rates are the same.

Coal Produced in Maryland and Washington in 1925*

(Exclusive of product of wagon mines)

State and County	Net Tons Used at Mines for Steam and Heat					Value		Number of Employees—						Average Number of Days per Man Worked	Average Tons per Man per Day
	Loaded at Mines for Shipment	Sold to Local Trade and Used by Employees	Made Into Coke at Mines	Total Quantity	Total	Average per Ton	Miners, Loaders and Shot-firers	Haulage and Track	All Others	Surface	Total				
INDIANA															
Allegany.....	1,814,377	94,041	6,922	.....	1,915,340	\$4,030,000	\$2. 10	1,797	325	193	314	2,629	214	3. 40
Garrett.....	751,491	17,246	10,495	.....	779,232	1,282,000	1. 65	609	130	73	139	951	193	4. 25
	2,565,868	111,287	17,417	.....	2,694,572	\$5,312,000	\$1. 97	2,406	455	266	453	3,580	209	3. 61
WASHINGTON															
King.....	530,697	54,435	11,204	450	596,786	\$2,259,000	\$3. 79	401	96	178	240	915	209	3. 12	
Kittitas.....	836,928	17,301	16,994	.....	871,223	3,232,000	3. 71	961	132	86	194	1,373	151	4. 20
Lewis.....	81,086	20,704	5,607	.....	107,397	260,000	2. 42	112	19	15	41	187	144	4. 00
Pierce.....	337,570	3,111	12,940	50,033	403,654	1,704,000	4. 22	312	85	224	182	803	231	2. 17	
Other counties ¹	529,910	19,072	9,848	.....	558,830	1,721,000	3. 08	273	47	34	94	448	244	5. 11
	2,316,191	114,623	56,593	50,483	2,537,890	\$9,176,000	\$3. 62	2,059	379	537	751	3,726	193	3. 52	

* The figures relate only to active mines of commercial size that produced coal in 1925. The number of such mines in Maryland was 88 in 1925, 93 in 1924 and 105 in 1923. Methods of mining in 1925: The tonnage undercut by hand was 1,772,628; reported as shot off the solid, 73,699; cut by machines, 830,730; not specified, 17,515. Size classes of commercial mines in 1925: There were 3 mines in Class 1B (200,000 to 500,000 tons), producing 24.8 per cent of the tonnage; 3 in Class 2 (100,000 to 200,000 tons), with 14.3 per cent; 9 in Class 3 (50,000 to 100,000 tons), with 27.9 per cent; 29 in Class 4 (10,000 to 50,000 tons), with 28.3 per cent, and 44 in Class 5 (less than 10,000 tons), producing 4.7 per cent.

The number of such mines in Washington was 56 in 1925, 58 in 1924 and 56 in 1923. Methods of mining in 1925: The tonnage undercut by hand was 1,417,723; shot off the solid, 965,037; cut by machines, 138,752; not specified, 16,378. Size classes of commercial mines in 1925: There were 4 mines in Class 1B (200,000 to 500,000 tons), producing 42.1 per cent of the tonnage; 5 in Class 2 (100,000 to 200,000 tons), producing 28.4 per cent of the tonnage; 5 in Class 3 (50,000 to 100,000 tons), with 15.9 per cent; 11 in Class 4 (10,000 to 50,000 tons), with 9.5 per cent, and 31 in Class 5 (less than 10,000 tons), producing 4.1 per cent.

¹ Cowlitz, Thurston and Whatcom.
Compiled by U. S. Bureau of Mines.

Foreign Market And Export News

Franco-Belgian Coal Markets Besieged by Buyers

Paris, France, Oct. 21.—Demand is overreaching available supplies of free tonnage in French and Belgian coal markets and consumers are faced with the unpleasant necessity of paying higher and higher prices for domestic and foreign fuels. For this, of course, the prolonged strike at the British coal pits is responsible.

French mines are working at top speed, but their output is insufficient to take care of all demands. Importations of German, Polish and Russian coals continue with more or less regularity, but these do not make up the deficit in industrial supplies. Domestic consumers, fortunately, have felt no real pinch, except in certain grades.

The O. H. S. received 53,900 tons of coal and 37,900 tons of coke from the Ruhr during the first nine days of the month. Receipts of reparation coke by the O. R. C. A. totaled 43,689 tons during the first half of October. These receipts have been augmented by shipments from independent coke ovens.

During September France imported 1,107,663 metric tons of coal, principally from Germany and Belgium-Luxemburg; 467,842 tons of coke, chiefly from Germany, and 127,184 tons of patent fuel, of which 91,334 tons came from Germany. August imports were 1,293,667, 415,681 and 93,440 tons, respectively. September exports were 356,552 tons of coal, 50,608 tons of coke and 16,439 tons of patent fuel, as compared with 419,109, 36,372 and 15,950 tons, respectively, in August.

Far Eastern Trade Outlook Slightly Improved

Tokyo, Japan, Sept. 15.—In the Far Eastern coal trade a settled condition is developing after a long period of weakness. The organized reduction in Japanese output is taking effect, and consumption is on the increase with the exception of points in the Japanese Inland Sea and Sanin districts.

The quantity held at ports and in the market has decreased 62,000 tons, approximating 2,025,000 tons, although the tonnage available in the mines is slightly more than formerly. Reserves in consumers' yards are less.

The British strike has had little, if any, influence on the market here, but the labor dispute in Australia has made itself felt on Kyushu and Hokkaido (Japanese) fuel, which has been exported to Manila and Singapore. Formosan fuel is especially in demand for export to the South.

In general, however, the Japanese coal mining industry has had an unsatisfactory half-year. According to the *Chugai Shogyo*, present returns barely cover costs and the improvement expected in the coming six months

will not mean a great deal in assisting the industry, which in some districts has been suffering acutely. Reduction in costs is planned, but there is little hope in this direction unless a merger is effected of the smaller mines. This seems impossible at present.

A partial solution of the difficulty is sought by the Japanese Coal Mining Association in adjusting railway freights on fuel. The association filed a representation with the railway department in the latter part of June with the hope that special consideration would be given when the State Railways revise the present freight scale, as planned. What attitude will be taken by the State Railways toward the problem is of unusual interest to the coal industry as presenting a possible satisfactory solution of vital importance to Japanese mining interests.

Reparations Deliveries Increase

For the first eight months of 1926 German coal deliveries on reparations account to France, Belgium and Italy were respectively 2,990,787, 1,940,624 and 2,123,336 tons. These figures are uniformly larger than in 1925 when the corresponding totals were 2,407,518; 1,660,456 and 1,086,990 tons.

During the eight-months period of the current year German coke deliveries to France amounted to 2,054,631, compared with 2,414,300 tons in 1925. Belgium received 77,336 tons compared with 200,925 in 1925. Coke shipments to Italy were only slightly over a thousand tons in the 1926 period while no coke shipments are recorded during the first eight months of last year.

Export Clearances, Week Ended Oct. 28

FROM HAMPTON ROADS

For United Kingdom:		Tons
Br. Str. Rochdale.....	7,062	
Fr. Str. Cape Recife.....	6,994	
Br. Str. Janeta.....	5,971	
Span. Str. Apolo.....	6,223	
Ital. Str. Giglio.....	4,230	
Fr. Str. Windermere.....	3,962	
Fr. Str. Romera.....	6,916	
Nor. Str. Brask.....	6,312	
Br. Str. Ingola.....	5,530	
Br. Str. Wordsworth.....	5,022	
Fr. Str. Pareora.....	10,516	
Nor. Str. Torvanger.....	8,519	
Br. Str. Kumara.....	6,532	
Dan. Str. Sierra Morena.....	5,959	
Ital. Str. Ansaldo Savola Secondo.....	6,466	
Br. Str. Hopeland.....	6,378	
Br. Str. Daybreak.....	5,844	
Du. Str. Westerdijk.....	9,961	
Span. Str. Angelo.....	6,911	
Grk. Str. Constantis Pateras.....	5,215	
Br. Str. Uterpe.....	5,501	
Span. Str. Gastelu.....	4,611	
Br. Str. Thistletor.....	6,614	
Ger. Str. Theodoros.....	7,825	
Fr. Str. Badagry.....	5,874	
Ger. Str. Chloe.....	7,266	
Grk. Str. Aghios Macus.....	6,701	
Br. Str. Kepw'ckhall.....	6,786	
Br. Str. Martaban.....	6,279	
Ital. Str. Monte Nero.....	6,503	
Br. Str. Dromore Castle.....	6,416	
Grk. Str. Thetis.....	5,411	
Grk. Str. Fortini Carras.....	6,709	
For Cuba:		
Br. Str. Glen Park, for Havana.....	2,925	

For England:	
Br. Str. Clan MacVicar, for London...	7,374
Span. Str. Artzander Mendl, for Plymouth.....	3,745
Dan. Str. Jungshaved, for Avonmouth.....	5,530
Ger. Str. Admiral, for Birkenhead.....	2,657
Br. Str. Glenmorag, for Plymouth.....	5,319
Br. Str. Misty Law, for Mersey.....	6,503
For Portugal:	
Port. Str. Luso, for Lisbon.....	8,198
For Jugoslavia:	
J.-S. Str. Dubac, for Gravosa.....	4,030
For British West Indies:	
Nor. Str. Askladen, for Bridgetown...	3,609
For Miquelon:	
Nor. Str. Hertha, for St. Pierre.....	1,821
For Brazil:	
Br. Str. Sweethope, for Rio de Janeiro.....	3,795
Br. Str. Deansway, for Rio de Janeiro.....	6,564
For Argentina:	
Amer. Str. West Carn'fax, for Buenos Aires.....	4,458
Br. Str. Helmestock, for Buenos Aires.....	5,744

FROM BALTIMORE

For England (to Queenstown for orders unless otherwise specified):	
Dut. Str. Maasydyk.....	5,194
Br. Str. Ocean Price.....	7,221
Br. Str. Kent.....	9,020
Span. Str. Guadiana.....	4,751
Ital. Str. Isabo.....	7,896
Br. Str. Cornthia.....	7,545
Br. Str. Benecroch.....	8,015
Br. Str. Reedpool.....	7,506
Br. Str. Neosfield.....	6,781
Br. Str. Rhymney, for Swansea, Wales.....	7,504
Br. Str. Carlin.....	5,395
Br. Str. Vittonia, for Lands End for orders.....	3,879
Br. Str. Rumowski, for Manchester.....	9,008
Dan. Str. Orkild, for Land End.....	3,110
Dan. Str. Uranienborg, for Portland.....	5,521
For Ireland:	
Fr. Str. Blairadam, for Belfast.....	4,258
Br. Str. Sunbank, for Dublin.....	4,293
Br. Str. Euphorbia, for Belfast.....	4,820
For Italy:	
Ital. Str. M. T. Cicerone, for Porte Vecchia.....	9,038
Ital. Str. San Pietro, for Leghorn.....	7,021
For France:	
Br. Str. Greystone, for Havre.....	6,382

FROM PHILADELPHIA

For United Kingdom:	
Nor. Str. Thyra, Br. Strs. Knebworth, Pentwyn, Essex, Be'chcliffe, Northwestern Miller, Span. Str. Delfina, Ital. Strs. Anfora, Oceania and Du. Str. Sirrah.....	—
For France:	
Br. Str. Charlesbury, for Marseilles.....	—
Ital. Str. Caritas.....	—
Fr. Str. Caracoli, for Havre.....	—
Dan. Str. Gudrun, for Havre.....	—
For Algiers:	
Fr. Str. E. M. Prechac, for Oran.....	—
For Cape Verde Islands:	
Gr. Str. Chelatos, Br. Str. Queenbury.....	—
For Portugal:	
Br. Str. Hollypark, for Lisbon.....	—

Hampton Roads Coal Dumpings*

(In Gross Tons)

	Oct. 21	Oct. 28
N. & W. Piers, Lamberts Pt.: Tons dumped for week.....	275,058	228,098
Virginian Piers, Sewalls Pt.: Tons dumped for week.....	190,017	168,861
C. & O. Piers, Newport News: Tons dumped for week.....	263,320	247,872

*Data on cars on hand, tonnage on hand and tonnage waiting withheld due to shippers' protest.

Pier and Bunker Prices, Gross Tons

PIERS		Oct. 21	Oct. 28†
Pool 1, New York.....	\$6.50@6.75	\$7.50@8.00	
Pool 9, New York.....	6.25@6.50	7.15@7.50	
Pool 10, New York.....	6.00@6.25	7.00@7.25	
Pool 11, New York.....	5.65@5.80	6.75@7.00	
Pool 9, Philadelphia.....	5.85@6.05	6.95@7.15	
Pool 10, Philadelphia.....	5.55@5.75	6.80@7.00	
Pool 11, Philadelphia.....	5.25@5.45	6.25@6.45	
Pool 1, Hamp. Roads.....	7.25@7.75	9.50@10.10	
Pool 2, Hamp. Roads.....	7.00@7.25	9.00@9.50	
Pool 3, Hamp. Roads.....	6.25@6.50	8.50@9.00	
Pools 5-6-7, Hamp. Rds.	6.75@7.00	10.00	
BUNKERS		Oct. 21	Oct. 28†
Pool 1, New York.....	\$6.75@7.00	\$7.75@8.25	
Pool 9, New York.....	6.50@6.75	7.40@7.75	
Pool 10, New York.....	6.25@6.50	7.25@7.50	
Pool 11, New York.....	5.90@6.05	7.00@7.25	
Pool 9, Philadelphia.....	6.10@6.30	7.20@7.40	
Pool 10, Philadelphia.....	5.75@6.00	7.00@7.25	
Pool 11, Philadelphia.....	5.50@5.70	6.50@6.70	
Pool 1, Hamp. Roads.....	7.25	9.50@10.00	
Pool 2, Hamp. Roads.....	7.00@7.25	9.00@9.50	
Pools 5-6-7, Hamp. Rds.	6.75@7.00	10.00	

†Advances over previous week shown in heavy type; declines in italics.

Coming Meetings

National Conference of Business Paper Editors. Annual convention at Hotel Astor, New York City, Nov. 9-10. Secretary, D. G. Woolf, 334 Fourth Ave., New York City.

Illinois Mining Institute. Annual meeting, Nov. 12 and 13 at Harrisburg, Ill. Edward Coulehan, superintendent, Saline County Coal Corp., Harrisburg, Ill., chairman of committee on arrangements.

Bituminous Coal Conference, Carnegie Institute of Technology, Pittsburgh, Pa., Nov. 15 to 18. Secretary, Prof. Sumner B. Ely, Carnegie Institute of Technology, Pittsburgh, Pa.

Harlan County Coal Operators' Association. Annual meeting Nov. 17 at Harlan, Ky. Secretary, E. R. Clayton, Harlan, Ky.

National Industrial Traffic League. Commodore Hotel, New York City, Nov. 17 and 18. Executive secretary, J. W. Beek, Chicago, Ill.

American Welding Society. Fall meeting Nov. 17-19, Buffalo, N. Y. Secretary, M. M. Kelly, 29 W. 39th St., New York City.

Southern Appalachian Coal Operators' Association. Annual meeting, Nov. 19, at Knoxville, Tenn. Secretary, R. E. Howe, Suite 1306, General Building, Knoxville, Tenn.

American Society of Mechanical Engineers. Annual meeting, Engineering Societies Building, 29 W. 39th St., New York City, Dec. 6-9. Secretary, Calvin W. Rice, 29 W. 39th St., New York City.

American Mining Congress. Annual meeting, Washington, D. C., Dec. 7-10, Hotel Mayflower. Secretary, J. F. Callbreath, Munsey Bldg., Washington, D. C.

Coal Mining Institute of America. Annual meeting, Chamber of Commerce, Pittsburgh, Pa., Dec. 8, 9 and 10. Secretary, H. D. Mason, Jr., Box 604, Ebensburg, Pa.

Smokeless Coal Operators' Association of West Virginia. Annual meeting Dec. 9, at Washington, D. C. (tentative) Secretary, E. J. McVann, Insurance Bldg., Washington, D. C.

Coal Operators' Association of the Thick Vein Freeport Seam of Penn. Annual meeting Dec. 14, at Pittsburgh, Pa. Secretary, C. W. Gibbs, Pittsburgh, Pa.

American Engineering Council. Annual meeting, Jan. 13-15, Washington, D. C. L. W. Wallace, 24 Jackson Place, Washington, D. C.

Trade Literature

The Wilnot Engineering Co., Hazleton, Pa., has just issued an 8-page booklet describing and illustrating the new Menzies Hydro-Separator, a machine for automatically separating impurities from coal. Included are both external and sectional views of the machine clearly illustrating its construction and working principles.

New Equipment

Cuts Corrugated Sheet Without Distortion

Heretofore, when corrugated metal sheets were cut on the job, the corrugations were distorted and had to be bent back again by hand. Joseph T. Ryerson & Son, Inc., 16th & Rockwell Sts., Chicago, Ill., have developed a tool that is light enough to be carried from place to place yet which will cut such sheets without distortion.

Cutting is accomplished by means of a pair of rotary double-bevel wheels



Easily Operated Shear

This little device cuts corrugated sheets evenly and accurately without distortion. It thus saves much labor over the old method of using a hammer and chisel.

knurled around the shearing edges. The upper cutter is driven by an internal ratchet which is operated by the handles, the lower one running free. The driven cutter is adjustable by means of a capscrew so as to assure a continuous, even feed on all sheets within the machine's capacity, which is up to 20 gage. After the cut is started, no effort is required to feed the shear into the work. The tool can be withdrawn from the sheet at any point by loosening the adjusting screw on the upper cutter.

Double-Expulsion Fuse

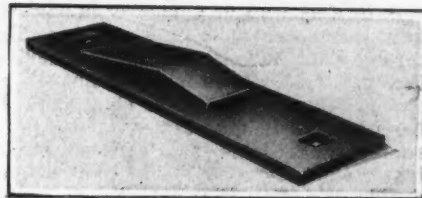
A double-expulsion fuse is now manufactured by the Line Material Co., Milwaukee, Wis. In this device the fuse cartridge is composed of a heavy, continuous insulated tube or explosion chamber, the lower portion being provided with a larger outer tube or second explosion chamber. The fuse links have a reduced section at the top which fastens into the upper contact and is brought out of the bottom of the tube and then up through the outer tube to the lower contact. When the fuse blows, the expansion of the gases expels the arc downward, and should the arc hold, the lower explosion chamber comes into play to effectively rupture the circuit. The lower explosion chamber also serves the purpose of blowing out of the box any gases which

might tend to pass upward after being expelled from the inner chamber.

This fuse is available in either wood or porcelain housings. The wood housed type is made for 6,600-volt service in capacities of 100 to 200 amp. while the porcelain-housed type is made for the same voltage but in only the 100-amp. size.

Decreases Derailments at Kick Switches

For sections of mine track that are not equipped with switch stands, the West Virginia Rail Co., Huntington, W. Va., has announced a "kick" switch plate. These plates were developed to keep the latches in place after they have been pushed over and to prevent derailments on account of the switch points being left partly open. They are made with a sloping surface on the riser which prevents the switch points from being jarred open and helps to move them into the proper position, because after they are shoved over the crest the points slide into the correct position.



Decreases Derailments

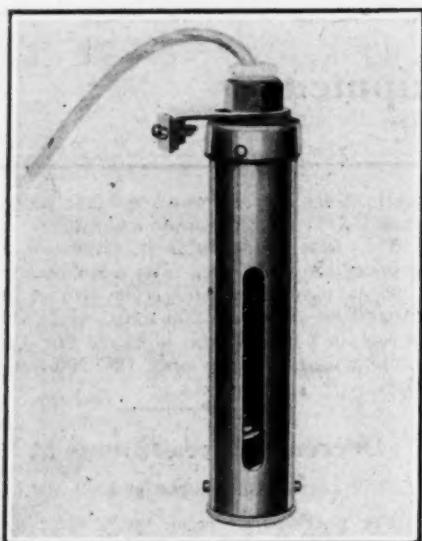
Intended for those who do not use switch stands with throws, but depend upon "kicking" the latches over. The plate shown above with its sloping riser helps the latches to slide over, once they are started, and keeps them locked.

Puts the Light Where Needed

A boiler-gage light, consisting of a tubular reflector with a bayonet attachment to the socket flange, has been designed and is being manufactured by the Westinghouse Electric and Manufacturing Co. of East Pittsburgh, Pa. A compression spring serves to maintain the connection and to hold the lamp in place, so that neither the reflector nor the lamp can loosen under vibration.

It can be mounted on the guard rail of any boiler water gage or on the end of a 1-in. conduit used to carry wiring to the reflector. This mounting may be accomplished by the use of a screw driver. When it becomes necessary to change the lamp, no tools are needed to remove the reflector because giving it one turn disengages the bayonet attachment, and the lamp can then be taken out.

Light is thrown on the water gage only. The heavy brass reflector is adjustable for any desirable mounting height. Forty-eight inches of two-way



Resists Vibration

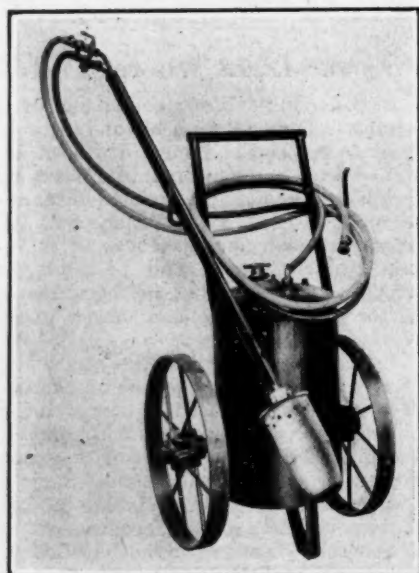
This device is easily installed and so constructed that vibration does not cause breakage with consequent light failure. Light is thrown on the water gage only, assuring that it may be easily seen.

conductor cord and an attachment plug are regularly furnished with the boiler-gage light. A standard-tubular Mazda B lamp with T-10 bulb should be used.

Dangers of Oil Burning Reduced by Suction

Safety as well as efficiency is said to have been achieved in an oil-burning torch recently developed. In this device the principle of oil supply has been changed from pressure to suction feed. No pressure is maintained on the oil-supply tank. This, it is claimed, eliminates the danger of injury to life, and avoids the fire hazard incident to a bursting tank. The danger of the oil spreading in case of a break in the supply line is also avoided.

This device is a product of the Hauck Manufacturing Co., of Brooklyn, N. Y.,



Safe Because Suction Is Used Instead of Pressure

This torch will burn 14 ft. above the oil level in the tank. The capacity is from 5 gals. to 20 gals. It is claimed to be much safer than the ordinary torch.

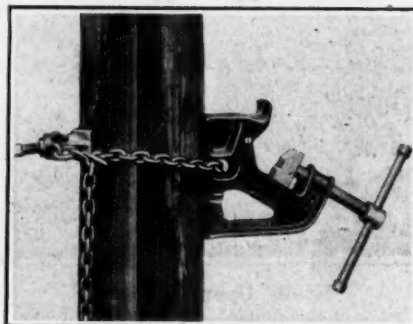
and is known as the Hauck Venturi Suction Torch. The company states that its pressure torches may be changed to operation on the suction principle by the attachment to the present oil tank of the suction burner, hose and oil-siphon tube.

Quick-Acting Side Opening Post or Bench Vise

A new inclined side opening pipe vise which grips and releases the pipe with one turn of the handle and requires less than half the time of the old-type hinged vise is being manufactured by the Oster Manufacturing Co., of Cleveland, Ohio.

It is equipped with oil-tempered, tool-steel jaws so designed that they will grip the pipe securely without danger of squeezing it out of round.

A special chain and clamp for fastening the vise to a post are furnished for use where it is not possible to bolt the vise to the work bench. Another useful



Handy for Bench or Post

Because this vise can be chained to a post, it is convenient for field work as well as in the shop.

accessory is a special eye bolt for pipe bending.

This new vise has an unusually wide range of 1- to 2 1/2-in. pipe, the jaws opening wide enough to accommodate a 2-in. coupling so that short nipples can be handled.

Industrial Notes

J. M. Allen recently joined the factory organization of the Foote Bros. Gear & Machine Co., Chicago, as manager of production. During the World War Mr. Allen was in the ordnance department of the U. S. Army as accountant in charge on field artillery construction, and after the armistice served a year as a member of the staff of the Claims Board. Subsequently he was manager of production of the Mosler Safe Co., Hamilton, Ohio, for five years, and manager of production and traffic for the Goldsmith Metal Lath Co., Cincinnati, Ohio, for about one year, which position he left to accept his new post with the Foote Bros. Gear & Machine Co.

Gilbert H. Unruh has been appointed Baltimore (Md.) representative of the Link-Belt Co. Pending the establishment of other headquarters, Mr. Unruh's address will be 618 Regester Avenue, Stoneleigh, Md. (Govans P. O.)

New Companies

The Capitina Coal Co., Bellaire, Ohio, has been chartered with a capital of \$20,000 to mine and sell coal in the Pittsburgh No. 8 mining field. The incorporators are J. F. Connor, Mary R. DeVinney, S. E. Crow, R. L. Crow and W. K. Crow.

The Ellen White Coal Co. has just been organized with a capital stock of \$50,000, with its principal office at Bluefield, W. Va., near which point a mine or mines will be operated. The company was incorporated by J. Tracy Walker, John L. Crockett, Guy D. French, Charles W. French and Q. V. Long, all of Bluefield.

The Dixie Harlan Coal Co., Harlan, Ky., capital \$15,000 has been chartered by C. V. Bennett, W. L. Landrum and L. A. Bowling.

The Mannington Fuel Co., Mannington, Ky., capital \$25,000, has been incorporated by John G. Thomas, Margaret S. Thomas and Robert Waters.

The Bald Knob Mining Co., Madisonville, has been incorporated with a capital of \$16,000. L. V. Stone, M. Freedberg and A. O. Lynch are the incorporators.

A charter has been granted to the Corwin Coal Co., of McWhorter, Harrison County, W. Va., for the purpose of engaging in the mining of coal. The company has a capital stock of 1,000 shares of no par value. The incorporators are Carroll Robinson, James H. Boyd, James H. Aupke, H. E. Brown and H. M. Reibling.

The Sharon Coal Co., Peoria Life Building, Peoria, Ill., has been incorporated to mine coal, manufacture coke and do a general coal, coke and fuel business. The incorporators are Richard O. Sharon, Mary T. Sharon and Mary Blaschek.

The Kickapoo Coal Mining Co., 28 East Jackson Blvd., Chicago, Ill., has been incorporated to own and operate coal mines and coal yards. The capital is \$35,000 and the incorporators are H. D. Wright, C. F. Salm and R. K. Ronk.

The J. C. Else Coal Co., 104 West 35th Street, Chicago, has been incorporated with a capital of \$35,000 to mine and deal in coal, and manufacture and sell coke and other coal byproducts. The incorporators are M. C. Putnam, John C. Else and I. B. Jeffery.

The Midway Fuel Co., Bevier, Mo., with a capital of \$8,000, has been incorporated. The company will own and operate coal mines. The incorporators are Silvio Fraulina, Bevier, and O. P. Alldredge and Lewis Wild.

The Carolina Coal Co., Florence, S. C., has been incorporated by S. B. Divine and H. W. Divine.

The Superior Smokeless Coal Co., Tazewell, Va., with a capital of \$100,000, has been incorporated by E. R. Boyd, of Tazewell, and Walter H. Robertson, of Bistol, Tenn.

The Elko Coal & Coke Co., Huntington, W. Va., with a capital of \$50,000, has been incorporated by Cadwalader Jones, or Ashland, Ky., and Harry S. Irons, of 524 Ninth Street, Huntington.